The Milroy Lectures
ON
DARWINISM AND RACE PROGRESS.

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LECTURE II.

DISEASE AND NATURAL SELECTION.

MR PRESIDENT AND GENTLEMEN,—We saw in the last lecture that racial change may be produced, firstly, by those who are most suited to their surroundings having a better chance in the struggle for life than those less suited, and, secondly, by the effect of the environment upon the germinal cells in cases where constitutional blood alterations are produced in the body of the parent. Amongst the most important environmental agencies which are capable of setting up constitutional change are small unicellular and microscopic vegetable cells, which under certain conditions gain access to the body, multiply there, and cause in one way or another more or less severe general and local symptoms. These micro-organisms are of many varieties, and each variety is capable of setting up its own peculiar disturbance. The disturbance set up by one kind we call small-pox, that arising from another kind cholera, and so on. Now, the very curious point comes out that in most of these diseases, although the composition of the blood is profoundly altered, and many of the tissues undergo marked change, this change, fortunately for us, is quite of a temporary character, and when the attack is over there is only one test which will enable us to say that the body is not just in the same condition as it was before. This test is that the body cannot be infected for a long time, if at all again, by the same micro-organism. At one time this immunity was thought by the followers of M. Pasteur to be due to an exhaustion of the special food required for the nourishment of the especial micro-organism; or M. Chauveau and his school held that during their sojourn in the body they developed some noxious substance inimical to their race. The more recent views of Metschnikoff and his school would rather point to a curious selective process taking place among an army of cells living in the blood and tissues, termed phagocytes. During an attack of fever the micro-organisms are attacked by these phagocytes, the weaker phagocytes are killed in the combat, and if their stronger and more efficient brothers are victorious these fill the body with a race of victors, hardy against any fresh inroads of the invaders. If this picture of animal life and struggle in miniature, this storm in a teacup, be true, as seems in some cases to be exceedingly probable, we need assume no further change in any of the body cells after an attack, say, of scarlet fever has passed away, provided that no complications have arisen. The germ cells, too, seem to get off scot-free, and after such a fever the individual is unaffected—except in one particular—as a race-producer. This one effect, not to his or her disadvantage, is once again one of immunity, for the children are less liable to attacks of the same disease. The facts here are very interesting and worth our passing attention. Small-pox or measles carried by infection to a race of men not previously exposed to these diseases commits ravages which are truly terrible, and white men brought into contact with malaria and yellow fever suffer to an immeasurably greater extent than do races living where these diseases are endemic and where they have been for generations exposed to their ravages. To give in figures some exact indication of this difference let me quote John S. Billings,[1] who states that, while the deaths from malaria among the black population are only 0·24 per cent., that among the recent white settlers in Sierra Leone is 47 per cent., a truly terrible mortality.

We have, as the result of the action upon mankind of the micro-organisms already mentioned, a constitutional disturbance which leaves behind, as its sole relic, individual and race immunity. It was at one time held that this race immunity was the result of hereditary transmission, that the parents were rendered immune, and that they transmitted this immunity to their children. Now it is conceivable that this may be. So far as we have seen, the blood is affected in these diseases, and therefore the germinal cell may be affected too. There is, however, no reason to believe that this is the case, for the facts can be explained in a much better way. In a community you have innate variations, some individuals resisting, others yielding to, an epidemic of fever. If the failure or success of an individual depends upon the innate combative qualities of his phagocytes, it is fair to assume that an individual who succumbs to the disease does so because his phagocytes are not equal to the war they are called upon to wage. That individual will perish, while his companion with more resisting phagocytes will live and have children with the innate quality of having resisting phagocytes. In this way a community will in several generations have undergone at the hands of the microbe a process of selection, and only those strains will be found alive who are able in some measure to resist its inroads. As we may readily explain these cases by selection it is unnecessary to assume that the germ cells are affected by the constitutional symptoms produced by the microbes of this class of infectious diseases, including, let us say, measles, small-pox, chicken-pox, scarlet fever, typhus fever, and typhoid fever. These microbes, living in the healthy body, in an uncomplicated case pass away and leave no trace behind except upon the quality of the phagocyte army, and the race is altered in respect to the particular microbe to which it is rendered partially immune. If, then, as is extremely probable, say in the next hundred years, we shall altogether banish this group of microbes from Europe, we must not expect to see any racial improvement; nay, rather the reverse. During an attack, for instance, of measles, although life or death may depend chiefly on the power of the phagocytes to resist and destroy the microbes, any concomitant weakness may decide the case, so that these diseases to a certain extent are race-improvers, inasmuch as they prevent a larger number of weak than of strong children from growing to maturity and contributing to the production of the next generation. There are other microbes which, in addition to the production of blood changes, have a profound and lasting effect upon many of the tissues of the body. Such are the microbes of leprosy and syphilis. The terrible ravages that the microbe of leprosy is capable of effecting are appreciated only by those who in Norway or elsewhere have visited those death-houses now fortunately to be found in but one or two parts of Europe. Strange to say, the germ cells do not seem to be reached, and this loathsome disease is not transmitted from parent to child.[2] A disease of mediæval, not of modern, Europe, we need not discuss its action on racial change more than to say that, hideous as are its aspects, it must be looked upon as a friend to humanity; for, while the microbe of typhoid fever will attack a man who is healthy and living in healthy surroundings—excepting for the microbe that lives in his well—the microbe of leprosy feeds upon those who are debilitated from conditions under which healthy and strong racial development is impossible. It is a depopulator of starved, ill-nourished districts, and the race recruits to its advantage from those more favourably placed. In the case of syphilis serious and often permanent tissue change is produced as a result of the action of the microbe, and in this case, to an absolute certainty, an effect may be produced upon the offspring. Many suppose that this is due to the transmission of the specific microbe itself from the body of one or both of the parents to the developing egg. That such a thing is not impossible is shown in the case of silkworm disease, in which the spores are to be found within the egg of the silkworm moth. These spores subsequently develop and attack the tissues of the grub of the next generation. In syphilis the same kind of thing no doubt occurs; for a syphilitic child may subsequently infect the mother or nurse during the period of suckling. But there are other cases which appear hardly to be explained so easily, and we have to assume that the germinal cells are themselves changed in some way during their sojourn in the parental body. After a certain time the disease is no longer capable of transmission by the parent, and the children born after this period are likewise incapable of infecting those who tend them. We have every reason to believe, therefore, that there are no specific germs or microbes left in the body of the parent, and that we have

[1] Text-book of the Theory and Practice of Medicine, p. 8.

[2] Report of Leprosy Commission in India, 1890 91.

to do solely with the tissue change, more or less permanent, produced by the microbes during their residence. The children born during this period are frequently ill-nourished, possess recognisable indications of disease, and are subject to nervous and other affections.

We have here therefore, for the first time, distinct evidence that an obviously acquired constitutional disease is transmitted, and that that transmission is in some cases due to a direct effect of the action of the microbe upon the germinal cells. The microbe of syphilis, unlike the microbe of leprosy, but like that of measles, feeds on healthy blood and tissue. It attacks the strong as well as the weak, and, if the weak more readily succumb, the strong and vigorous are more apt to acquire it. It is not, therefore, selective, like leprosy, and its capacity of transmission ranks it as a disease distinctly inimical to race progress.

During recent years it has been discovered that the symptoms of phthisis and scrofula are due to a microbe, the tubercle bacillus. It appears, however, that this bacillus cannot gain access to, or multiply in, the tissues of a healthy and vigorous man or woman; most of us here have, I doubt not, often carried this micro-organism within the mouth or stomach, and though the gastric juice cannot destroy it, as is the case with so many of our invisible foes, it cannot pass into our blood or lacteals. Dr. Woodhead puts this fact strongly.[3] He says: "A perfectly healthy individual, placed under favourable conditions as regards food, fresh air, and exercise, is never attacked successfully by tubercle bacilli, the active, vigorous tissue cells being perfectly able to destroy any bacilli that make their way into the lungs, the pharynx, or the intestine." It appears, too, that a certain type of individual is readily attacked by this microbe, while the normal individual, debilitated though he may be by unfavourable external conditions, falls far less readily a victim. As Professor Lauder Brunton[4] remarks: "We are constantly meeting with persons belonging to very consumptive families who escape the disease by living under conditions where the bacillus tuberculosus is likely to be absent. On the other hand, persons such as nurses are in all probability frequently inhaling the microbe and yet are not attacked by the disease. In the first case immunity is probably due to the absence of the seed, notwithstanding the favourable condition of the soil; in the second it is due to the barrenness of the soil, notwithstanding the presence of the seed." Inasmuch as phthisis is markedly hereditary, we may look upon the type, not the disease, as being transmitted. A phthisical type of person is one who comes of a family liable to fall a prey to this microbe, and he is recognisable by many distinctive characteristics of hair and complexion, and by qualities of temperament, feature, and figure. Sufferers from phthisis are prone to other diseases, such as pulmonary and bronchial attacks, so that over and above the vulnerability to this one form of microbe they are to be looked upon as unsuited not only for the battle of life, but especially for parentage and for the multiplication of the conditions from which they themselves suffer. The phthisical, too, are attractive in personal appearance on account of their rich skin and hair colouring and their frequent brightness and vivacity, and their obvious delicacy elicits a feeling of pity and wish to protect them. In consequence of this they easily marry, and they are also very fertile. Galton concludes[5] by saying: "There is fair doubt whether a group of young persons destined to die of consumption contribute considerably less to the future population than an equally large group who are destined to die of other diseases." Now this phthisical type is very common with us indeed, and it appears to be an innate variation to which our race is liable. Billings[6] says that under similar conditions the negroes have even a greater tendency to fall a prey to the bacillus, while the Mongolian races are far less liable to it than we are. It is evident, therefore, that those people with the tuberculous variation who, even under the present circumstances, manage to contribute their quota to the population would, were the bacillus tuberculosus altogether exterminated, contribute more than their share, and the type would become more common. This type, apart from the action of the bacillus, is a delicate and fragile one and liable to other affections, and the effect of giving the type any advantage in the struggle for life would surely imperil the well-being of the future of the race. When some years ago it was thought that a cure for phthisis had at last been obtained great tribute was naturally and rightly paid to its discoverer; but had this cure proved as efficient as the more sanguine were led to expect it would be terrible to contemplate the eventual suffering that would have resulted from the constantly increasing numbers of the phthisical type that would have been born with each generation. The bacillus tuberculosus is a friend of the race, for it attacks no healthy man or woman, but only the feeble. It is like the bacillus of leprosy in this respect. Leprosy attacks anyone living under certain unhygienic conditions: remove these conditions—as we have done long ago—and the bacillus of leprosy disappears; its duties are over, like those of the extinct plants and fishes in the rocks.

The tubercle bacillus attacks not only the poor, ill-fed, and ill-conditioned, but also those who live well. It is a disease of all, and those who live in well-ventilated rooms, and who conform to every sanitary regulation, may still belong to the type who fall a prey to it. It is certain, therefore, that, improve the external conditions of life how you will, this type will remain. It is also as certain that by giving the type a better chance than it has already, by preventing infection or by delaying the disease, it will be more and more prevalent as each generation comes to life. It comes out pretty clearly from our short study of the infective diseases that some of the microbes that cause these, such as the bacillus of tubercle, only feed on unhealthy human tissue, while the greater number of them kill, if anything, the weak rather than the strong. They are, on the whole, our race friends rather than our foes, and if we attempt seriously to do away with their selective influence—viz., the elimination of the weak and the preservation of the strong—we must supply this selective influence by something else, or the race will tend to deteriorate. What can be done in the future, and what it is expedient for us to do at the present time, will be more fully discussed in a subsequent lecture; but I may state at once that *pari passu* with our endeavour to prevent these diseases must be our efforts to procure that human reason and care to avoid suffering shall all be enlisted in such selection as shall necessitate the birth of future generations from the healthiest and best of those amongst us. As selection is the race-changer we must replace selection by the microbe by the selection of human forethought. A large number of diseases, due probably to some innate family predisposition, are known to us. Of these diabetes, hæmophilia, and some others are of comparative rarity and may be left on one side in this necessarily contracted sketch. Others, such as cancer and constitutional weakness of the respiratory and other organs, as well as insanity, are frequent enough to merit our close attention. Of cancer we at present know too little, and I propose to leave it on one side. Of inherited weakness of special systems we have many examples, such as a delicate respiratory or digestive mucous membrane, inherited variations in the mechanism of assimilation and also gout and obesity—in fact, innate delicacy of all kinds. These render their possessor less able to cope with his natural surroundings, let these be what they may. The cold and exposure necessary to the manhood and vigour of the strong are to the feeble sources of danger and misery. Active muscular and mental exercise, without which the life of the healthy and vigorous would not be worth living, are to the sickly endurable only with the greatest moderation. Simple food and drink, on which our healthiest citizens are bred, are to the invalid indigestible and coarse, for they require the adjuncts which only riches can buy. It is evident, indeed, that the very conditions of our daily life, even if we were to establish a perfectly uniform system of State Communism with self-heating houses, meat dinners, and flannel underclothing all round, would not be the same. An innate organic difference could not by such an ideal change be laid aside; nay, more, the weaker type, by its preservation, would certainly increase relatively to the stronger. As would naturally be expected, the most robust races are bred under conditions of such hardship as, while not affecting them, diminish considerably the chances of the sickly. The "hardy mountaineer" is a proverbial expression, which, otherwise explained, means that with the simple fare and cold mountain breezes the race is replenished only from the strong. This selection seems to us to be fraught with terrible cruelty; we see its effects daily around us. By long usage only are we accustomed to scenes and tales of sickness and early death, and when these problems are put before us in their naked truthfulness we shudder and would fain put them on

[3] Bacteria and their Products, p. 230.
[4] Introduction to Modern Therapeutics 1892 p. 15.
[5] Natural Inheritance, p. 182.
[6] Op. cit., p. 8.

one side. We must remember, however, that by this process racial change has taken place. The lower types have given place to the higher, and man's intelligence has grown from brutish instinct. We cannot change bad into good; good can prevail only by the elimination of the bad. We may wish perhaps that this were otherwise; but it is not, and we have to adapt our actions to what is and not to what we should like things to be. It is, too, by looking these questions straight in the face that we can discover how man's reason may most usefully be used to prevent the suffering which—to use a metaphor—blind nature inflicts upon us in order that we may remain physically robust.

Returning to our study, let us examine the facts regarding insanity. Just as no two men agree in the possession of equally sound mucous membrane or lung tissue, so we may have decided variations in the brain tissues. Together with unsound brain tissue we have symptoms which we call mental derangement, and of these we have an infinite variety, starting from the mentally too excitable, or too inert, and passing on to those who are obviously diseased and useless or dangerous to society at large. Now, these brain affections are markedly hereditary—proverbially so indeed. It is true that an overplus of work, or anxiety, or depressing surroundings may produce insanity or other nervous conditions in one who under better surroundings would undoubtedly escape. There are truly exciting factors, but they act with alarming ease in the case of certain types, while in others their action is relatively inoperative. This type, an organic variation, is transmitted, it is not destroyed. As Dr. Bastian says: "It is now a well-established fact that persons who are endowed with a neurotic habit of body very frequently transmit a similar tendency to their children. It is not a tendency to any particular nervous disease but a vulnerability of the nervous system as a whole which is transmitted, so that under the influence of even a comparatively slight strain the weakness may manifest itself in one or other of several ways." Speaking of the suicidal tendency, Dr. Maudsley remarks: "It is indeed striking and startling to observe how strong the suicidal bent is apt to be in those who have inherited it, and how seemingly trivial a cause will stir it into action. Persons affected by it will sometimes put an end to themselves on the occasion of a petty contrariety or when they are a little out of sorts, and with almost as little concern as if they were taking only a slight journey." In half his cases Dr. Maudsley traced an inherited fault of organisation; and again, speaking of the many ways in which a neurotic taint may manifest itself, he says: "In families where there is a strong predisposition to insanity one member will sometimes suffer from one form of nervous disease and another from another form: one perhaps has epilepsy, another is afflicted with a severe neuralgia or with hysteria, a third may commit suicide, a fourth become maniacal or melancholic, and it might even happen sometimes that a fifth evinced remarkable artistic talents." It would seem, then, that the neurotic individual is an innate variation, and that any racial change in respect to the prevalence of insanity must therefore be brought about by selective means. It appears to me that the evidence in favour of there being any hereditary predisposition to alcoholism is very slight. Among the lower classes at the present day there are, no doubt, whole families who generation after generation have had a bad name for drunkenness, but it would appear that in these cases this is but one manifestation of a careless or vicious temperament, which shows itself also in idleness and crime. Among the middle and upper classes a generation or two ago families of hard drinkers were also known. In these cases, as one may learn nowhere better than from Barrington's "Sketches of Irish Life," the drinking was a part of a general devil-may-care temperament, or was even mainly associated with a pride in the accomplishment itself. At the present day, when drunkenness is looked down upon as disgraceful by the better and more educated classes, excessive drinking has vastly diminished. It is fair, therefore, to conclude that, while what we may term unbalanced temperaments and instincts of self-indulgence are inherited, the actual way in which these instincts will manifest themselves depend upon the surrounding conditions which may happen to prevail. Such unbalanced persons would under certain surroundings of training and education fall a prey to drink as when they are associated with drunken parents or friends; under other surroundings they may be guilty of crime or debauchery and tend in any case to avoid in every way the quiet, orderly routine of citizenship. While, therefore, we can hardly say that the tendency to drink is hereditary, yet we may affirm that certain type variations, running no doubt in families, are especially liable to drink and other forms of vice. It follows, too, that drink may be looked upon as a selective agency—one constantly thinning the ranks of those who are weak enough by nature to give way to it and leaving unharmed those with healthy tastes and sound moral constitutions. It appears probable, however, that the children of drunken parents suffer not only from the transmitted organisation of the father or mother, but also from the direct action on the germinal cells of the alcohol carried in the parental veins. Galton gives the case of a man who had ordinary children, who then took to drink and had imbecile children afterwards. This must, however, surely be an extreme case, or perhaps one which might bear quite another interpretation were all the circumstances known, for we know of the existence of habitual drinking, as in parts of the Lowlands of Scotland and Germany, where it is certain that no such startling cases of transmission prevail to any large extent. Still, we must be prepared to grant that, whether from the direct action of alcohol on the germ cells, or its action in debilitating the parents, and thus affecting the nourishment of the germ cells, the offspring will to some extent be affected by the drunken habits of the parents. This leads us to the question as to whether or not legislation with a view to prevent the sale of alcohol would further or retard race progress. Experiments of this kind have been, and are being, tried—notably in Scandinavia and the United States; and there are those who strongly advocate preventive legislation in our own country. The case against preventive interference would be quite clear were it not for the fact that offspring are debilitated by the drunken habits of their parents. Were there no transmitted effects, then drink, acting as a selective agency, would have been exterminating the self-indulgent and uproarious ever since the heroes first drank mead in Odin's hall from the teats of the she-goat Heidhrum. The fact that the children suffer organically, as well from bad example as from the habits of their drunken parents, alters the case and makes the issue by no means clear. Dilke informs us[7] that the convict element may now be disregarded in Australian society. In the case of some crime was an accident and would not be transmitted to the children they left behind them. On the other hand, the genuine criminal and also the drunken ne'er-do-well left no children. Drink and vice among the "assigned servants" class of convicts and an absence of all facilities for marriage worked them off the face of the earth, and those who had not been killed before the gold discovery generally drank themselves to death upon the diggings. Here the selective agency comes in alone, for the facilities for marriage were slight; but the case would no doubt be altered had the drunkards before their death married and produced children, who would not only have inherited the parents' innate weakness of moral constitution but would have been directly debilitated by the effects of their drunken habits, while they still formed a part of them. Preventing the sale of alcohol would, therefore, remove a selective agency and in this respect be harmful. On the other hand, where there are facilities for marriage it would prevent a certain amount of transmitted debility which would follow were habits of drunkenness permitted, and in this respect its introduction would be beneficial.

May it not be said that a clear case is to be made out for the introduction of preventive measures in districts where drunkenness has become a matter of universal habit or fashion, where, therefore, the selective action of alcohol—from the fact that almost all take it—is reduced to a minimum, and where from its general consumption in injurious quantity the transmitted debility may be considered as reaching towards a maximum? In this case preventive measures, introduced perhaps for a few years only, would be instrumental in getting the people into more reasonable habits of living and might enable those who possessed the taste to cultivate such pastimes and recreations as would keep them free from falling victims to a vice to which they had previously given way rather from force of imitation than from any strong *personal* predilection. On the other hand, from our point of view, that of racial progress, the case is not so clear, for its introduction into a district where the population have in the mass learnt to lead sober lives, where drunkenness is looked upon as a vice, and where only those naturally without self-respect and proper

[7] Problems of Greater Britain, vol. i., chap. 2.

self-control fall victims to it, takes away a selective agency of considerable potency. In the United States there is and has been a strong feeling against the liquor traffic, not only on the part of those who hold that drinking is in itself wrong, and leads to crime and misery, but on political grounds as well. The Americans drink, not at meals as we do, but at the drinking-saloons and bars, and the habit of treating to liquor is universal. These drinking-saloons are, too, the cause of much of the political corruption deplored by the better class of Americans, and in many of the States stringent anti-liquor laws are consequently enforced. There are many reasons, therefore, for the introduction of local option, or even prohibition; and, inasmuch as these laws have been in operation for some years, we can study their effect on those who have been subjected to them.

We are told[8] that in Maine a Prohibitionary Law was enforced in 1851, lapsed for two years (1856 and 1857), but has continued since that time up to the present date. We have therefore an experiment on liquor prohibition lasting for forty years. In Maine the manufacture and sale of alcohol in any form is illegal and punished by imprisonment and fine. The law is enforced, and we are told[9] regarding its operation that "by tending to drive the traffic into by-ways and disreputable 'dives,' by removing the visible temptation offered by open bars and saloons, by making it relatively if not absolutely difficult to obtain drink, and by throwing a general atmosphere of subterfuge and disrepute about the trade, it has been a material agent in suppressing a demand which is not only regarded by many as morally wrong and physically ruinous, but is rendered by the operation of the law disreputable. These tendencies, receiving support from the general voice and sentiment of the women, have so influenced manners that, whatever share in the result ought to be assigned to the effect of prohibition, it is a fact that the demand for liquor or the desire for it in large quantities or small proceeds only from a limited section of the population." If now we turn to the statistics of crime, pauperism, and insanity we shall find a result which may appear a startling one to many. The statistics of the Insane Hospital show a great and progressive increase of patients from 75 in 1850–51 to 685 in 1891–92. In regard to in-door paupers the ratio is slightly lower than that of the neighbouring States:—

	1880.		1890.
Maine—ratio of paupers per million of population	2319	....	1756
Other States, non-prohibitive	2339	....	1790

In regard to out-door paupers the census attaches to Maine a number very considerably in excess of the average. As regards prison population Maine has a low, but decidedly increasing, ratio, which comes out especially clearly in the case of the juvenile offenders in reform schools:—

	1880.		1890.
Maine—ratio per million of population in reform schools	176	....	256
Average in other nine North-Eastern States	469	....	425

In Kansas, another State in which prohibition prevails, dating from 1881, the United States census tells us that there were more prisoners in its penitentiary and county gaols in proportion to its population in 1890 than there were in 1880, and that of all the neighbouring States Kansas had in 1890 absolutely the largest ratio of prisoners to population. In Iowa, the third State in which prohibition has been most effectually carried out, we are told[10] that opium dens are formed as the alleged result of prohibition, and that "in one small town prohibition was so effectually enforced that when the bishop of the diocese visited it an intended celebration of the Sacrament had to be abandoned because no wine could be obtained. My informant, whose testimony was unimpeachable, was told by a physician practising there that the use of opium in the place was a positive curse; he had twenty or thirty cases on his hands of persons suffering from the habit, both men and women." One may often draw false deductions from statistical evidence through ignorance of facts, which qualify and give quite another colour to the figures quoted, but the above data strongly suggest that any lasting prohibition, other than the dictates of a man's own conscience and sense of self-respect, may do more harm than good, for when not upheld as a fashion excessive drinking can only be looked upon as a symptom of a debilitated or depraved nature, which without access to drink would show itself in other ways and if artificially kept sober will tend to perpetuate and widen the circle of its depravity. It is, however, quite clear that, as there is such a thing as double transmission from drunken parents, not only of a type unfitted for citizenship, but also of the direct action of the alcohol itself upon the germ cells, the race will gain in quality if its ranks are not recruited from drunken members of the community. Here, it appears to me, we have most hope of doing permanent good, for if, after all, drinking is a symptom of something which lies deeper—an organic defect, a poor or vicious type—then the artificial prevention of drunkenness only props up this type by removing a stumbling-block over which it would otherwise fall. The most undoubtedly effective measures of a preventive kind would be such regulations, or, better still, such strength of public feeling in this respect, as would render it rare indeed for habitual drunkards to produce offspring, who would be but reproductions of themselves who have so manifestly shown their unfitness for the duties and obligations of citizenship.

Before proceeding further I must pause to guard myself against misconception. It might appear to those unaccustomed to a detailed analysis of complicated social factors that I am advancing arguments which would justify anyone in scattering broadcast the microbes of cholera and small-pox, or in leaving unlimited whisky in the way of his weakened neighbour in order that a rapid extermination of the unfit might occur. This is by no means implied in anything that I have said, for social problems are of extreme complexity, and in any discussion regarding, say, the attitude of society towards the genus "microbe" it is necessary to fix the attention upon one point at a time, and the sole point that I have discussed is the selective action of the microbe upon the race. These microbes have been improving the race in the past, they have been factors working for the strength of the race; it by no means follows, however, that this action should be permitted to them in the future. If we have studied them, have followed out their life histories, and can exterminate them, then "humanity," the emotion of all emotions, that we have to trust in for race perfection, pleads for the sick and suffering, saying, "Spare these children of mine who suffer." And reason shows that the children may be spared, and the microbe destroyed, but that something must be done to replace their selective agency in order that the children's children may not suffer.

So far I have not advocated any new departure in the way of action: I have merely taken up and reviewed a series of facts, and that from one point of view alone. I hope now to indicate what in my own opinion are the lines on which successful work may be carried on, and how far on these lines it is judicious to work. It is obvious on the face of it that rapid progress or sudden reform is out of the question, for all organic change is slow; we are not dictators and can only influence others by instruction and advice. On putting before ourselves the broad question, "How can we improve the health of the race?" many, in spite of what has already been indicated, may at once reply that the health of the race is being improved, as is shown by the fact that the individual living now has on the average a longer life than one living twenty years ago. This increased longevity does not necessarily imply increased innate healthiness, but may, and in point of fact does, imply increased amelioration of surroundings alone. No one can deny that in our own country at least our conditions of life have during the last twenty or thirty years greatly altered for the better; bread has given place to meat, cotton to flannel, thatch to slate, and the cesspool to the drain. Workshops have been rendered healthy, cabmen are provided with shelters, and employers of labour have been rendered liable for the human lives placed in their hands. In consequence of this, many sickly ones, who in a more primitive community would have died early, have dragged their lives into, and perhaps even through, the child-bearing period, and the lives of the strong have been less prone to attack from the microbe, from the dust and impure air of the factory, and from accident and exposure. In this way some years or months have been added to the lives of the greater number of us, so that the death-rate is lessened, and an infant's probability of life is longer to-day than it was fifty years ago. But our innate healthiness is not by any means increased, for freedom from disease does not imply robustness of constitution. A robust man who as a country parson might live into his eighties might be killed in a few years as a glass-worker or miner, and his early death in the latter case would not imply that he was unhealthy. Again, a man with inherited weakness of

[8] Liquor Legislation in the United States and Canada. Rathbone and Fanshawe.

[9] Op. cit., p. 104. [10] Op. cit., p. 170.

this lung tissue might be kept alive by the fostering care of friends and relatives to a green old age without anyone calling him a healthy man. We have absolutely no foundation, therefore, for assuming that because the average longevity of the race has increased during the last half-century we are more robust than we were. The evidence is quite the other way. From what we have already seen it is evident that in innate qualities, whether of mind or body, we are dealing with something which suffers transmission, and if, as all admit, the general conditions of life have improved, and the sickly are kept alive as they were not formerly, it follows that these sickly ones will have contributed in our century a greater proportion of their qualities to the race than in any previous century of our history. We are absolutely safe in assuming this, for up to the present time almost the only factors which have determined marriage have been mutual regard and social considerations.

People with strong strains of insanity or phthisis marry freely, and there is at present almost no strong public feeling against such a course. The fact of the matter is that in less advanced times than the present an abundant and ever recruited population was almost the determining condition of a nation's existence. The depopulation produced by war and zymotic disease was so dreadful that nations with great fertility alone survived. Thus it came about that all minor differences were overlooked in the one great necessity, that of keeping up a population large enough to resist extinction or to make conquest. The problem of sickly, diseased offspring had not arisen, for all such died in infancy, and the man was most blessed who had the greatest number of children. No sin or disgrace as attached to the begetting of children destined to incapacity was dreamed of. Now that conditions are somewhat changed it is not unnatural that there should elapse a certain period of time before we are prepared to adapt our lives to these new conditions, and that we should realise late in the day that we are not liable to the black death, or a war of extermination, and that this alone alters for us the problem of child production. Thus it is that the sickly and diseased have married when they could, without let or hindrance, and may with certainty be assumed to have by so much the more produced a race deterioration amongst us. We should be justified in making such a statement were there no other facts to go upon, but there are other facts. In the Registrar-General's reports we have ample data for drawing at any rate rough general conclusions as to the progress of disease amongst us. In Report 54, Table 17, the annual death-rates from various causes per million of population are given, and arranged in groups of five years from 1858 to 1890. We have there a history of thirty years, and even in that time a notable change in this history is to be observed. I have arranged the greater number of facts given in Table 17, so as best to bring out those facts which we are discussing. In the first group of disease are those due to micro-organisms, and in all cases—except that of puerperal fever—a diminution of diseases to a very marked extent is to be observed; phthisis and scrofula share in this decrease. In the second group are diseases that may to a great extent be called those of carelessness, want of management, neglect, and ignorance, such as convulsions, diseases of dentition, parturition, and registered accidents. These, too, as one would expect, diminish yearly in a country where surrounding comforts and a sense of responsibility are on the increase. When we turn to the third group, that of constitutional disease, where the hereditary tendency comes in, we find an increase in almost all the heriditary diseases. A tendency to an increase of neurotic affections is shown by an increase in the deaths from nervous diseases, suicide and intemperance. A large increase in the diseases of the respiratory system is due in part to the increasing number of tuberculous patients who, kept from inroads of microbes, nevertheless readily fall a prey to other affections. There is, too, an increase in diseases of the circulatory system, in cancer, diabetes and other constitutional diseases; it is evident, therefore, that while preventive medicine and modern civilisation are removing the microbe and diminishing the dangers of child-bearing and child-rearing, those who are spared fall a prey to some one or other form of constitutional disease. It might not unreasonably be urged, however, that one must die of something, and that, after all, the mean death-rate is lower than it was thirty years ago; but this increase in life does not amount to much and means practically that a greater number survive fever and neglect, especially in childhood and youth, only to be killed off in middle age. In the chart from the Registrar-General's Report we find that deaths from old age are less and less frequent, indicating that we are permeated by less healthy constitutional strains; and in a table compiled by Longstaff [11] we get the deaths from all causes in 1876–80 as compared with 1861–70. We find that, while the death-rate is being lowered for ages up to forty (in women up to forty-five), after this the death-rate is increased. The tendency of events is, therefore, to remove selective agencies, whereby people escape death and live in greater numbers through the child-bearing period into their forties. Now this has been going on to a marked extent in the past and appears to be continuing, and I do not see how we can shirk the fact that preventive medicine and civilisation between them have already deteriorated in a marked degree the healthy vigour of our race. If things continue in their present course it is fair to assume that in a hundred years or so the wretched products of our race—embodiments of every constitutional disorder, transmitted by ancestry from whose ranks the diseased have not been weeded out before the child-bearing period was over by those natural agencies hitherto free to act—will drag out their lives martyrs to surroundings which they have tried to mould; they who, as a race, should have been moulded by their surroundings. People hardly realise that as regards freedom from selective agents no race of animals or men have ever been in the condition in which we find ourselves to-day. The civilisations of Greece and Rome, redundant in art and philosophy, were hotbeds of disease, war, and famine, while amongst our ancestors there was added to these selective agencies the exposure to the rigours of a northern climate. Preventive medicine is trying a unique experiment, and the effect is already discernible—race-decay. But the experiment has gone quite far enough and it should be modified to produce a different result. Why should the microbe select? Why not public humanity and public reason, since selection there must be? This appears to me to be the only possible solution of the difficulty, for it is not to be desired that preventive medicine should cease making war upon the microbe, provided at the same time that other selective agencies are used to replace them. Is it not our duty, by boldly facing facts and publicly stating them, to endeavour to bring about such strong public opinion as will force people to look upon the act of giving birth to a diseased child as one of the most cruel sins? We can, however, hardly take a comprehensive view of the whole question without discussing our attitude to the criminal class and to those who are incapable These form a large section of the community, and I must leave them to be dealt with in our next lecture.

THE NATURE AND TREATMENT OF ASPHYXIA NEONATORUM.

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I. LITERATURE AND STATISTICS.

ASPHYXIA NEONATORUM is usually classed with diseases of the respiratory organs. While admitting its essential cause to be interference with placental respiration, there seems to me to be greater reason in grouping this disorder with diseases of the circulation. The interrupted oxygenation is not due to deprivation or deterioration of *air*, as in cases of suffocation from other causes, but to vitiation of the circulating fluid. It is, therefore, no more a lung disease than are disorders of what is metaphorically termed "interstitial respiration," while its mechanical pathology is chiefly cardio-vascular.

In the *Practitioner* for February and March, 1888, I published an article on the Nature and Treatment of Cyanosis, in which I endeavoured to show that the key to a solution of the mechanism of that condition lay mainly in the state of the ductus arteriosus as regards closure, and argued that, "as the repletion of the pulmonary circulation post partum is normally the main cause of the closure of the ductus arteriosus, it follows that a patency of the latter in most

[11] Studies in Statistics, p. 256-257.

cases argues an imperfect circulation of blood through the lungs, with deficient thoracic aspiration of the circulation, unless the volume of blood has other means of reaching the aorta and the lungs than by way of the pulmonary arteries. Thus the degree of closure in this passage may be taken as an index to the amount of normal lung function, and also to the degree of diversion of the normal blood current." In November of the same year Fritz Schantz[1] published a paper on the mechanical closure of the ductus arteriosus, in which his observations and argument led him to regard the ductus arteriosus as the most important factor in many cases of asphyxia neonatorum. So strongly is he of this opinion that he expresses his belief[2] that the recovery from asphyxia in newly-born children by Schultze's method is dependent less upon ventilation of the lungs than upon a closure of the ductus arteriosus by the forcible descent of the diaphragm which takes place during that manipulation—a closure, according to him, causing a diversion of the circulation lungwards, and thus the establishment of aerial respiration. The conditions of cyanosis from cardiac malformation and those of asphyxia neonatorum are not, of course, identical, but, inasmuch as the former is due to the persistence of fœtal channels, they are closely allied; and there is accordingly much in Schantz's argument which is in agreement with the conclusions arrived at by myself in the paper to which I have referred. Cyanosis is admittedly a disease of the circulation, and asphyxia neonatorum, as I have stated, must in its mechanical effects be regarded in the same light.

The literature of the subject is extensive, but the condition has, as a rule, been treated more exhaustively by continental, and especially German, than by English writers, although it is to William Harvey that the almost perfect elucidation of the fœtal circulation is due, as well as the perfect explanation of the course of the blood in the adult; for, although he believed that blood passed from the vena cava through the foramen ovale into the pulmonary veins and thence into the left auricle, his conception of the fœtal circulation was, with this exception, practically correct.[3] References to other authorities will be found in their own place in the following pages.

The condition in question is as important as it is interesting and probably causes the premature extinction of a greater amount of male than of female life. It can, however, only be said that this is probably the case as to males, because only an indirect inference can be made from the Registrar-General's reports, a brief study of which will be a useful introduction to a further consideration of the subject. It is, perhaps, excusable that a register which is concerned with births and deaths should assume life to commence after, not before, birth, and death to be only possible after the commencement of aerial life. There is in consequence no registration of "stillbirths," although an informal certificate is necessary before the stillborn infant can be buried. There would no doubt be difficulties in doing otherwise were the probable causes of all stillbirths to be demanded in a certificate, difficulties social as well as professional. The patient might reasonably object to the publication of her specific taint, if such existed, while the accoucheur might hesitate to acknowledge what may have been want of dexterity on his part or slow perception of the progress of intra-uterine asphyxia. There does not, however, seem to be any sufficient reason why the fact of the stillbirth of viable children recently asphyxiated should not find a place in the registrar's reports and contribute to the completeness of those very valuable returns. The large and heterogeneous column of "premature births" registered as causing death up to twelve months might usefully and logically be preceded by one noting the stillbirth of children born after the average period of viability. The chief causes of death in infants born alive are very properly set forth as accurately, no doubt, as is possible under the circumstances. It cannot, however, be doubted that a very large proportion of stillbirths is due to that very "atelectasis" which figures so prominently in the returns as a cause of death in children "born alive," and the prevention of which—possible in many cases, although doubtless also unavoidable in many others—would be promoted by the required certification of the proximate cause of intra-uterine death in such cases. The stethoscope is as useful in labour as the forceps. It frequently tells the physician when he must use the means which his art places at his disposal to save life. Even in the interests of the mother, one of the most delicate tests of her condition and progress in labour is the state of the fœtal circulation; while, in the interest of the unborn but viable child, it is, of course, of the first importance. Yet it would be difficult to say how many cases even of lingering labour are attended throughout the country without a single application of the stethoscope to ascertain the condition of the fœtal vitality. The vast majority of atelectatic and moribund children might, I am persuaded, enter upon extra-uterine life with every prospect of healthy survival were the condition of their hearts' action accurately noted and interpreted during labour. Of deaths from atelectasis, I find from the record in the returns for England, with an estimated population of 29,199,066, that there were during the year 1891 547 of males and 544 of females; in those for Scotland during 1890, and with a population of 3,735,573, 68 of males and 41 of females; and in those for Ireland, with a population of 4,681,248 during 1891, 11 of males and 4 of females. Or, taking the totals, there were for England 1091 deaths from atelectasis, for Scotland 109, and for Ireland 15. Scotland, in other words, with a population less than a seventh that of England, has a death-rate from this cause about a tenth of that in England, while Ireland, with a population nearly a million greater than that of Scotland, and therefore about a sixth of that of England, shows an atelectatic death-rate a seventh less than that of Scotland and about a seventieth that of England. There is thus a very remarkable disparity, in this respect, in favour of Ireland, and it is easy to attribute it to imperfect registration; but if this is operative there are probably also other causes at work, into which it may be instructive to inquire. It is interesting, in doing so, to compare the birth-rate of the three kingdoms and also the proportion of deaths in childbed. The average birth-rate of England per 1000 persons living was in 1891 31·4; that of Scotland in 1890, 30·4; while that of Ireland in 1891 was 23·1. The birth-rate of Ireland, therefore, like the atelectasis-rate, was considerably less than that of the sister kingdoms; but the disparity of the former is much less than that of the latter, and cannot, therefore, *of itself* account for the very small percentage of deaths registered from this cause, while the birth-rate of Scotland, it will be observed, is nearly equal to that of England, but the death-rate from atelectasis is out of proportion less in view even of this fact.

The number of deaths amongst mothers in childbed in England during 1891 and from all causes was 4787, to which "puerperal fever" contributed 1973, and various other "accidents" of parturition 2814. Thus a death-rate of 5·24 was composed, and was higher than that of any year since 1875. In Scotland during 1890 363 deaths were registered under "diseases of parturition," and 324 from puerperal fever, making a total of 687 deaths in childbed. This yields a proportion of 5·5 deaths to 1000 children born. In Ireland the deaths from "puerperal fever" numbered 236 in 1891, being 89 below the average for the ten preceding years and 16 under the number for 1890; while "accidents" from other causes amounted to 421, or a total of 657. We thus obtain a maternal death-rate of 6·7 to 1000 children born, and that notwithstanding an acknowledged diminution in the mortality from puerperal fever. These figures will be more easily grasped by studying the following table compiled from the Registrar-General's reports:—

Country.	Year.	Population.	Total maternal deaths.	Deaths from puerperal fever.	Deaths from other accidents of childbirth.	Maternal deaths per 1000 registered births.	Total atelectasis deaths.	Male atelectasis deaths.	Female atelectasis deaths.	Birth rate per 1000 living.
England	1891	29,199,066	4787	1973	2814	5·24	1091	547	544	31·4
Scotland	1890	3,735,573	687	324	363	5·5	109	68	41	30·4
Ireland	1891	4,681,248	657	236	421	6·7	15	11	4	23·1

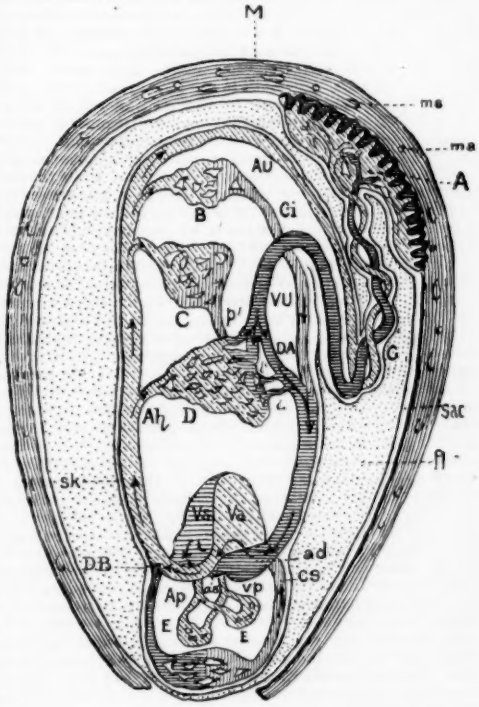
[1] Pflüger's Archiv für die Gesammte Physiologie, November, 1888.
[2] Loc. cit., p. 261.
[3] Exercitatio Anatomica de Motû Cordis et Sanguinis, cap. vi., p. 39. Ed. 1766.

It will be observed, further, that the deaths from atelectasis in all portions of the country were greater among male than female children. It is interesting in this connexion to note a fact mentioned by the Registrar-General for England in the report for 1891 (p. 9)—namely, that in the Celtic areas of England and Wales the proportion of male to female births is greater than in the non-Celtic areas, and also that this male preponderance is shown in the "sex-rate" of Scotland and Ireland, the more Celtic portions of the United Kingdom. He suggests race as an explanation. This fact may, perhaps, account in a measure for the high rate of maternal death in Ireland, which is probably the most Celtic portion of the country; but when one notes the lower maternal death-rate in Scotland, where the Celtic element must be accorded a considerable influence, it would appear that there must be some additional factor at work. When the very low "atelectasis" death-rate of Ireland is taken into account, as well as the value attached to infant life in Roman Catholic communities, we begin to gain some light both upon the causes of the proportionately greater maternal death-rate in that country and the small ratio of death from atelectasis registered there. The greater proportion of male births would argue, on the whole, greater difficulty in labour, and that this should be coupled with the production of a larger number of children free from atelectasis can only mean that the vitality of the fœtus is more carefully watched in Ireland than in those portions of the kingdom where the safety of the mother is the guiding consideration. I do not wish to suggest that the mother is *neglected* in Ireland, or that the condition of the child is overlooked in England and Scotland, but it would naturally follow that the balance of life would be in favour of that organism which has most consideration paid it, and it requires a more than average degree of skill to pay equal attention to both.[4] These considerations have thus a bearing upon the subject of this paper—namely, the causes and *nature*, and the timely prevention and prompt and enlightened *treatment*, of asphyxia neonatorum, or apparent death in the newly born.

II. PHYSIOLOGY.

It is the function of the placenta to convey nutriment and oxygen to the fœtus and in a measure to act as an emunctory to it; but, as Schroeder[5] remarks, inasmuch as the fœtus can exist for a longer time without nourishment than without oxygen, the due conveyance of the latter is most important in considering the question of apparent death in the newly-born. Anatomists have demonstrated the complete separation of the maternal and fœtal vessels and by injections have proved the continuity of the umbilical arteries and veins, on the one hand, and of the maternal venous and arterial systems, on the other. Having regard to the varying conditions of pressure to which these sources of fœtal life are subjected, it is not without interest to note the spongy and compressible character of the placenta and the great variety it exhibits in lobulation, in the depth of its sulci, and in thickness and general consistency in different cases. The anatomical peculiarities of the vascular connexion between mother and child in the umbilical cord are also of interest. In a cord of average length the most notable feature is the spiral arrangement of the bloodvessels, and a less evident, but nevertheless important, circumstance is the fact that the umbilical arteries *widen* as they approach the placenta—a condition which, as Galabin[6] remarks, diminishes the force of the circulation towards the placental end of those vessels, but one also which, I shall argue, has an influence in producing the cardiac retardation noted in the fœtus when the uterus contracts. In association with this, the spiral course taken by the umbilical vessels generally must be regarded as erecting a barrier against excessive afflux and reflux of blood either towards the placenta or fœtus. The principle on which spiral vessels generally and retia mirabilia act I endeavoured to explain from a study of the circulation in the sheep on a former occasion.[7]

It is only necessary in this place to mention cursorily the preponderant influence of the right ventricle in the fœtus, the easy transmission of blood into the aortic system through the ductus arteriosus, and the relief of dextral cardiac pressure from the presence of the inter-auricular foramen ovale. It is of less, but nevertheless of some, importance to remember also that the greater portion of the most highly oxygenated blood in the fœtus circulates in its cephalic extremity, which includes the respiratory and cardiac centres; that the channel for this oxygenation is the umbilical vein; and that the fœtal arterial system finds exit and relief through the umbilical continuations of the hypogastric arteries.



F

Diagram of the materno-fœtal circulation, modified from the plate in Spiegelberg's Text-book of Midwifery, Sydenham Society's Translation, vol. I., p. 134. M, Vertical section of the uterus. ms, Maternal sinuses. ma, Maternal arteries. A, Placenta. B, Circulation through the lower part of the body. C, Intestines. D, Liver. FE, Lungs. F, Circulation through the upper part of the body. DA, Ductus venosus Arauzi. Vu, Umbilical vein. l, Superior hepatic vein. l', Inferior hepatic vein. p, Vena portæ. Ci, Cava inferior. Cs, Cava superior. ad, Right auricle. as, Left auricle. Vd, Right ventricle. Vs, Left ventricle. ap, Pulmonary artery. Vp, Pulmonary vein. Ah, Hepatic artery. Au, Umbilical artery. DB, Ductus Botalli. sac, Amnotic sac. fl, Amnotic fluid. sk, Fœtal skin. Spiegelberg's diagram was drawn by Strasse from the description of Hasse. In my modified diagram dark horizontal shading indicates the blood, chiefly arterial; vertical shading, that chiefly venous; oblique and interrupted shading, the blood about equally mixed. The dotted space is the amniotic fluid, and the uterine muscle is indicated by M.

The act of respiration at birth developes the latent pulmonary circulation, depletes the fœtal channels in the heart and great vessels, and promotes their closure. Attempts at respiration in utero have a similar tendency, as will be shown presently, but attempts are at best but partial successes and, under the circumstances in question, are doomed to failure. The fœtal attempts to establish an extra-uterine vascular system give way, even after the death of the young organism, to the normal conditions characteristic of fœtal apnœa. Schantz has ingeniously argued[8] that the aortic end of the ductus arteriosus being fixed by that vessel, while the end issuing from the pulmonary artery is movable, the duct is capable of being influenced by the change of

[4] The returns for Scotland for 1891 and for Ireland for 1892 were not published when the figures from which the above table was compiled were accessible. On examining the more recent returns for Scotland and Ireland, however, I find my argument enforced. The birth-rate of Scotland in 1891 per 1000 persons living was 31·2; the total maternal mortality was 718, of which 378 were due to puerperal fever and 340 to other accidents of childbirth, while the maternal death-rate per 1000 births was 5·6; the male deaths from atelectasis numbered 79 and the female 60, making a total of 139. In Ireland the birth-rate during 1892 per 1000 persons living was 22·5; the total maternal mortality was 678, of which 275 were due to puerperal fever and 403 to other accidents of childbirth, whence a maternal mortality per 1000 children born of 6·4. Male deaths ascribed to atelectasis numbered 13 and female 4, making a total of 17. These figures also show the small birth-rate, high maternal mortality, and small death-rate from atelectasis in Ireland as compared with other portions of the United Kingdom.

[5] Lehrbuch der Geburtshülfe, p. 587.

[6] Midwifery, first edition, p. 69.

[7] Dextral Valvular Disease, p. 30.

[8] Loc. cit.

position of the pulmonary artery and diaphragm which ensues upon the establishment of aerial respiration. The former, he thinks, pulls upon it, rotating forwards with the inflating lungs, while the latter in its descent, together with the forward-moving sternum, drags upon the pericardium and through this investment upon the ductus arteriosus. That such a mechanical traction cannot be without influence in producing that closure of the duct characteristic of the fully developed circulation is very probable; I do not, however, think that it disproves the correctness of the opinion which would regard the simple diversion of the blood stream lungwards as the first and main factor in this closure. It is the establishment, I believe, of the collateral circulation, which gradually closes the previously used channel, not the sudden closure of the latter, which at once establishes the collateral circulation. As is well known, and as Ballance and Edmunds remark in their treatise on Ligation in Continuity (p. 75), in which also they quote at length Schantz's views, [8] "it must be remembered that for many days after birth the duct is found pervious to a stream of water, and during life, though closed in the centre, yet at either end the walls are separated by blood which must be under the same pressure as that within the pulmonary artery and aorta." The degree of traction and rotation, moreover, must intermit with the respiratory movements, while the left intra-ventricular pressure, although not so much exceeding the right during the first week of life as it does later, must be greatly raised from the influx of pulmonary blood and ligature of the umbilical cord. It is probably even at this period somewhat higher than right cardiac pressure, and pressure in the aorta and pulmonary artery must be related to that in their respective ventricles. Under these circumstances there is probably more or less oscillation of blood in the still pervious duct, which is incompatible with permanent closure by the means which Schantz suggests. As Harvey[9] remarks, "that arterial canal has no valve to prevent the movement of the blood hither and thither," and this must be more or less the case so long as the passage is pervious. The very presence of an occasional clot in the vessel, to which Ballance and Edmunds refer,[10] is rather evidence of a slowing circulation than of a perfectly interrupted one in most instances; for if the clot indicates a condition strictly analogous to ligation it ought to occur frequently, not exceptionally. Finally, the experiments of Erichsen, to which I shall have occasion to refer later, are against an absolute acceptance of Schantz's views. It may, however, be reasonably concluded that any circumstance which tends to prevent the establishment of the pulmonary circulation tends to maintain the patency of the ductus arteriosus, and, *vice versâ*, that any temporary or partial restriction of this patency will tend likewise to *engorge*, if not develop, the pulmonary circulation and also produce that superficial venous congestion which has been termed "cyanosis," and which probably plays a part and indicates a stage in most cases of asphyxia neonatorum.

Leaving out of consideration the causes of death in the early ovum, intra-uterine death in the viable fœtus may be due to premature detachment of the placenta, with accidental hæmorrhage; changes in the texture of that organ due to extravasation of blood or inflammation, in some cases associated with constitutional disease such as diabetes; imperfect oxygenation from "anæmia"; or to placental hyperplasia usually if not always caused by the syphilitic virus, which, without detachment of the placenta, causes such a strangulation of the materno-fœtal circulation as to induce the death of the child. Priestley, quoting Fraenkel, and drawing upon his own experience, refers to this cause of abortion or stillbirth in his Lumleian lectures on the Pathology of Intra-uterine Death.[11] I have myself met with a very instructive example of this condition in which the production of viable children at term was associated with diminution in the size of the placenta after specific treatment and wearing out of the disease by lapse of time. In this case the poison was conveyed by the husband, who married before all evidence of secondary syphilis had disappeared.[12] Apart, however, from the general question of intra-uterine death, to which it is only necessary at present to refer, and in order to appreciate the causes of apparent death in the newly born, it is necessary to consider the incidents and accidents of parturition. These may be divided into two groups—those, namely, which affect the fœtal circulation directly and those which influence it indirectly. To the former belongs any interference with the materno-fœtal circulation by undue pressure upon, or interruption of, the placento-funicular circulation by accidental compression, stretching, or entanglement of the cord during labour or delivery, and by the excessive and general squeezing of the uterine contents, including the placenta, by prolonged or tetanic contractions of the uterus, natural or induced—that is, resulting from the use of an oxytocic. In the second group must be placed cases of apparent death caused by too prolonged or powerful a compression of the fœtal head during natural and violent efforts at extrusion of the child, or too powerful compression and traction by forceps or other methods of delivery. The causes of apparent death, pushed a little further, are of course those of actual death. The mechanism whereby these agencies produce their results will be apparent when discussing the pathology of fœtal death.

III. SIGNS.

The proof of death in these cases is cessation of the action of the heart—the *ultimum moriens*. The evidence of threatened death is disorder in the action of that organ. The dying adult heart usually quickens; it may even assume the "tic-tac rhythm" of fœtal life. The dying fœtal heart, on the other hand, becomes progressively slower, until it ceases to beat. Acceleration, therefore, in the latter does not generally portend immediate danger, while the converse, except during normal uterine contraction, does. It is agreed that the fœtal heart first becomes distinctly audible in the fifth month of pregnancy and becomes somewhat slower and still more distinctly audible as pregnancy advances. Both cardiac sounds may be heard, and, although their duration does not differ so much as in extra-uterine life, the diastole, even in the fœtus, is usually marked by greater prolongation and accentuation than the systole. Diminution in the fœtal heart-rate is due either to raised arterial pressure or to exhausted or blunted sensibility of the cardiac centre in the medulla, and probably also in some cases to direct inhibition of the pneumogastric nerve from intra-cephalic pressure. It can scarcely be that the usual retardation of the fœtal heart during normal uterine contraction is the result of pneumogastric inhibition from imperfect oxygenation of the blood; it is more probably due to raised arterial pressure in the umbilical arteries, a retardation which is favoured by that increase in the diameter of these vessels as they approach the placenta of which mention has already been made, while it is also moderated by their spiral arrangement. Schultze rejects the influence of this retardation in the fœtal circulation and, recognising the difficulty involved in reconciling the forbearance from attempts at respiration on the part of the fœtus with a theory of vagus irritation from accumulating carbonic acid in the blood, enters upon a not very convincing argument in support of his theory by assuming a simultaneous diminution in the irritability of the respiratory centre.[13] The maternal pulse, as is known, is quickened during uterine contraction in spite of a raised peripheral pressure; but the mother is not only sentient but also emotional. Her accelerant nerves by cerebral impulse control the pneumogastric reflex, which, not so controlled, would produce retardation of the heart's action. The fœtus is sentient, but not emotional, and reacts as though it were all spinal cord; the pneumogastric reflex, therefore, under these circumstances, exhibits its normal reaction up to a certain point. When, however, such retarded action of the fœtal heart fails to resume its habitual acceleration during the pauses in uterine contraction it may be assumed that, in addition to this mechanical and vascular causation, there is irritative or exhausted central action from accumulation in the blood of carbonic acid. Such retardation is significant of danger to the life of the fœtus. Schwartz[14] has carefully studied this question and states that retardation of the fœtal heart takes place in 35 per cent. of cases during the first stage of labour; in 46 per cent. in the expulsive period; while in 19 per cent. it is absent, or only noticed when the head is passing through the vulvar opening, although these figures are not exclusively applicable to vertex presentations. "In a third of the cases," he further remarks, "the slowing tends to prolong itself into the interval between the pains. In these cases the child, if not seriously injured, comes into the

[8] Op. cit., cap. vi. [9] Op. cit. [10] THE LANCET, April 30th, 1887. [11] Abstract of Transactions of the Æsculapian Society, 1884, p. 43.

[13] Gerhardt's Handbuch der Kinderkrankheiten, vol. ii., p. 11, Art. Asphyxie.
[14] Archiv für Gynäkologie, vol. i., 1870, p. 361 et seq.

world with more or less well-marked evidence of inspiration." These changes may be detected by auscultation with the stethoscope and are only liable to one fallacy—namely, the temporary loss or lessened audibility of the fœtal heart from change of position on the part of the fœtus; if, however, lessened audibility be associated with normal acceleration, this sign may be regarded as due to distance of the heart from the surface of the abdomen rather than to diminished vitality of the fœtus.

On internal examination, when the fingers can feel the umbilical cord, the fœtal pulse rate may, of course, be counted like the pulsations of the adult arteries, and its rate and regularity have the same significance as the sounds revealed by the stethoscope. When, in addition, during obstetric manipulations attempts either at abdominal or thoracic respiration are perceptible to the hand, danger to fœtal life is imminent. Such respiratory movements may be attempted in utero, not only in cases of podalic version, when they may be seen by the accoucheur, but also in other cases, when they may be felt by the introduced hand.[15] Schroeder[16] quotes Schultze as having heard a snuffling ("schlürfendes") murmur with the stethoscope at the same moment that he could determine by the introduced hand thoracic breathing on the part of the fœtus. Such a respiratory murmur, in order to be diagnostic, would have to be confirmed by intra-uterine palpation, as in the above instance, and is only of accidental interest.

Finally, in the presence of a sufficient quantity of air in the cavity of the uterus the occurrence of intra-uterine fœtal respiration may be denoted by a fœtal "cry"—*vagitus uterinus*.[17] I have also on more than one occasion believed that I have heard the fœtal cry before the delivery of the head in the case of multiparæ in whom the infra-uterine section of the birth-way has been freely dilated—a *vagitus vaginalis*.

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[15] Spiegelberg, Würzburger Medicinische Zeitschrift, vol. v., p. 158.
[16] Lehrbuch der Geburtshülfe, 1872, p. 593.
[17] Schroeder, op. cit., p. 593.

ON PUERPERAL FEVERS.

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So much attention is now directed to what are called "preventable diseases" that no excuse is necessary for inquiry into one which comes under that category. It has often appeared to me that some protest should be raised against the theory that such diseases are dependent upon the particular bacterium or bacteria alone which are supposed to produce them. Such a theory loses sight of the fact that bacteria are dependent for their growth, life, and activity upon the medium in which they are placed; provided that the material is unsuitable, bacteria cannot either grow or live. The paper of the latest date which has come to my notice is one by Sir Spencer Wells on the prevention of preventable disease. So far as puerperal fever is concerned his conclusions are that it can be, or ought to be (under intelligent supervision), entirely prevented by measures of antisepsis. He quotes statistics to support his conclusions, but I am unable to gather—indeed, there are no facts quoted upon which to base conclusions—how far the use of the antiseptic is to be credited with the result of 1 death in 1231 births, or how far the treatment of labour and the various conditions associated with it and with the general lying-in period account for it. My own conclusion is that, without a proper appreciation of the various conditions which may arise during labour and the lying-in period, the use of antiseptics may prove a barren advantage. A routine use of antiseptics no doubt can and will prevent many of the fevers connected with childbed, but they must be used with a knowledge of the conditions to be treated before they can do this. Sir Spencer Wells has quoted statistics from special cases: it is only necessary to quote some statistics from Germany to show that in a country where the antiseptic treatment is specially taught, even to midwives, the general mortality from childbed is very much larger than what he would have us to believe is the proper one.[1] The fact is that, in places where antiseptic treatment and an adequate knowledge of the pathology of the troubles of childbed are combined, a very small mortality results, and it must not be forgotten that in large maternity hospitals where this combination exists there are also very special advantages in the way of nursing, &c. Sir Spencer Wells' paper is only quoted as being a recent one, but there has also lately been a discussion on the subject at the British Medical Association's annual meeting, where there was very much the same tendency—namely, to magnify the power of antiseptics and to lose sight of the fact that in the absence of suitable conditions bacteria cannot live, let alone produce symptoms of disease.

I propose in this article to consider more especially the pathology of puerperal fevers, and in a less degree the clinical symptoms of some of them. The first question is, What fevers are to be discussed? Strictly speaking, any fever is a puerperal fever which appears during the puerperal period, but not all of them are fevers proper to the puerperal period. The following classes are to be discussed here: (1) those arising from poison generated in fragments of decidual tissue which ought to have been cast out or got rid of immediately after the third stage of labour, or in the ordinary lochial secretion, or in the secretion from wounds in the maternal passages; (2) those arising from catarrhal or septic inflammation of the endometrium; and (3) those arising from morbid changes in blood-clot, thrombotic or embolic. The classified zymotic diseases are excluded. Dr. Boxall's papers on "Scarlet Fever during Pregnancy and the Puerperal State"[2] lend evidence of a conclusive character to my own conclusions, derived from observations of the course of such zymotic diseases as measles and influenza occurring in the puerperal state, that these diseases run the same course during this condition as at other times. Diffuse peritonitis not septic in origin is also excluded, because, although the condition might be classed as a puerperal fever, and very often is, yet the causation of it is rather accidental than strictly proper to the actual process of labour. It is caused among other things by rupture of the intestine, usually in cases where the bowels have been neglected. I recollect one case very well in which no action of the bowels had occurred for fourteen days. On my first visit to the patient I found the abdomen already distended; the straining was very violent, and the child was born suddenly when the patient was out of bed. Death ensued within thirty hours of delivery. There appears to be little doubt that if a hospital had been at hand where an abdominal section could have been performed and where nursing comforts and necessaries could have been obtained, the ruptured intestine might have been discovered and sewn up with some prospect of recovery. This is only mentioned as an accident occurring about the full term of gestation, which was not associated with delivery as a cause, and which antiseptic measures did not and could not prevent. All the details are not given, because it is not one of the fevers which are here under discussion. Another cause of simple diffuse peritonitis is bruising of the peritoneum by forceps, more especially when applied to the brim. Such cases are called simple, because they are not associated with the symptoms common to traumatic fever and the great majority of puerperal fevers. All ordinary fevers are excluded which are common to all periods, lying-in or otherwise, and those fevers connected with the breasts and lactation. These latter are not peculiar to the lying-in period, but may be seen during lactation in any stage.

PATHOLOGY

It is interesting to note that in the discussion on the "Relations of Puerperal Fever to the Infective Diseases and Pyæmia" at the Obstetrical Society of London in 1875 the speaker who gave the clearest views of the pathology of these diseases was Mr. Hutchinson, and that those views were based upon definite observations upon the pathology of erysipelas and septicæmia met with in surgical cases. The discussion was, however, taken as a whole, only useful as showing the confusion that existed in practitioners' minds at that time about the whole question of puerperal disease. Only seven years after this discussion I began the subject of obstetrics, and I was

[1] Deaths from puerperal fever in Prussian towns for the ten years 1881-90, 2·7 to every 1000 births. Deaths from puerperal fever in Baden for the last seven years, 3·8 per 1000 births. Deaths in childbed, average for ten years: Prussia, 5·4 per 1000; Bavaria, 5·9 per 1000; Saxony, 6·6 per 1000; Baden, 7·2 per 1000; and Hamburg, 5·6 per 1000.
[2] Transactions of the Obstetrical Society of London, 1888.

fortunate in having as my teacher one who taught big principles with characteristic caution. Moreover, he was one thoroughly in sympathy with true scientific principles, and it is due to his encouragement that I have, from the time when I first joined him in the lecture-room, devoted a great deal of my leisure to working out for myself some definite bases upon which to found my practice in midwifery. The keynote of his teaching upon the treatment of puerperal fever is contained in his address to the Medical Society at Birmingham,[3] and some of his last words are pregnant with interest. "The ideas suggested by the researches of Pasteur, of Toussaint, of Greenfield and Buchner may prove to be mere *ignes fatui*, but they may prove, on the contrary, to be true guides. It is by following out such ideas, verifying or disproving them by new investigations, that progress is made in science." Such was the characteristic attitude of Dr. Matthew Duncan towards great questions. The basis upon which a proper appreciation of all disease and its treatment must rest is a correct pathology, and the subject is therefore approached with a consideration of the fission fungi or bacteria, members of which group are known to be capable of producing disease in the human body; and the inquiry first presents itself, What is their position in nature? They are present either in some stage of development or in maturity, practically everywhere, and their function is the destruction of dead vegetable and animal substances, so that the products resulting from their activity can be of use to the life of the higher plants. They have been classified by Dr. Bary as follow: (1) those which can grow on dead substances alone; (2) those which usually grow on dead substances, but can, if suitable conditions are present, exist and multiply in living organisms; and (3) those which occur in nature as parasites, and those which as a rule complete their cycle of development as parasites, but which can exist under certain circumstances, or can pass through some part of their life, in dead material. They are organised—that is to say, they are possessed of the attributes of life—and are consequently subject to the same influences which affect other living things. They are dependent for their existence upon suitable outside conditions, and under varying outside conditions their growth and development vary or they die altogether. That outside conditions affect these organisms is indisputable. Dr. Adami, in a paper read before the Pathological Section at the British Medical Association's meeting in 1892, has shown not only the variability of many of the bacteria under varying conditions, but also that a comparatively slight alteration in environment, if continued over several generations, may bring about the production of a race which during countless generations (for countless generations can be raised artificially in a few months) retain the acquired characteristics. Now, although variations may be produced by alteration in the outside conditions of these fungi, he showed that a return to the original conditions would produce a return to the original characteristics. The next point is that the action of fission fungi as disease producers may be modified by alterations in their conditions of life. As long ago as 1870 Dr. Greenfield proved in a paper read before the Royal Society that it was possible so to tone down the activity of the bacillus which produces anthrax, by cultivating it in fluid obtained from the eye of the ox, that when they were placed in the bodies of animals susceptible to the disease they were incapable of producing the symptoms of the disease.

The work of Professor Pasteur and other bacteriologists is constantly producing fresh evidence of the influence of outside conditions on the growth and functions of bacteria, but I will only refer to the remarkable results obtained by Dr. Sims Woodhead and Dr. Ruffer with the bacillus pyocyaneus, published in a paper read before the Epidemiological Society of London in April, 1891. Dr. Ruffer's results are stated to be these: when grown in bouillon it gives rise to the formation of pyocyanin and a green fluorescence; in egg albumen pyocyanin is not formed, but the green fluorescence is; in peptone gelatine media the fluorescence is lost, but pyocyanin is formed in abundance, but if glucose is added the formation of pyocyanin is also interfered with. Professor Hueppe and Dr. Cartwright Wood, as referred to in a paper read by Dr. Louis Parkes before the same society and in the same year on the relations of saprophytic to parasitic bacteria, propound a theory that disease-producing bacteria are not specific entities of original creation, but are descended from a common ancestral saprophytic form.[4] They show that immunity can be conferred on certain animals against virulent anthrax by preventive inoculation with ordinary saprophytic bacteria. They found both in water and earth a bacillus which, by its appearance and growth in gelatine, was indistinguishable from the bacillus anthracis, but without its physiological or pathogenic properties, since it exerted no action on white mice, which are extraordinarily susceptible to anthrax infection. Of a large number of mice, guinea-pigs, and rabbits which were inoculated with this saprophytic bacillus, and which remained apparently quite unaffected as the result of this inoculation, a considerable number were subsequently found to have been rendered completely immune against virulent anthrax infection, whilst in others which developed anthrax the disease ran a longer course than in the control animals not previously inoculated, and the culture of bacillus obtained from them exhibited marked attenuation. A consideration of these facts and theories leads to the conclusion that, at all events, the condition of the maternal parts after delivery and the condition of the bodily functions of the lying-in woman merit very careful consideration in approaching the question of the pathology of puerperal disease; but before touching that question I must refer to the bacteria which are associated with puerperal fevers. At the present time, although Professor Koch and his pupils especially have found specialised bacteria which produce septicæmia in a variety of animals, these have not been discovered in the cases of diseases of wounds—I mean such diseases as suppuration, phlegmon, sepsis, and pyæmia. Mr. Watson Cheyne asserts, for instance, that he knows of six different microbes which can cause suppuration in man; but, on the other hand, he points out that there are microbes, such as the micrococcus of erysipelas, which have two different properties, which, besides the property of spreading locally in the living tissue and thus producing locally intense inflammation without suppuration, have also the property of causing a severe constitutional affection, fever, &c. A third example, he says, will show that these two properties do not necessarily go together: the coccus of finger erysipeloid spreads in exactly the same manner and causes local inflammation also without suppuration, but it has no effect on the general condition of the patient.

Now it may be asked, Why, in considering puerperal fevers, are the bacteria which produce disease in wounds considered at the outset? It is because Professor Pasteur and Dr. Doléris have come to the conclusion that the same microbe—namely, the streptococcus pyogenes—produces both puerperal fever and also metastatic pyæmia. Whether or not there is a variety of cocci which produces puerperal fevers and pyæmic affections is not at present decided, and in view of the consideration of the other facts and the theories based upon them relative to the life-history of the bacteria generally it seems probable that the particular material form which the microbe possesses and its peculiar function are dependent upon the conditions and surroundings in which it is placed. At all events, it may be stated with some degree of certainty that the class of microbes associated with puerperal fevers is the same as that connected with morbid conditions of wounds.

The morbid appearances which are found after death from puerperal fevers next claim attention.

The suppurating sores or ulcers have swollen, often œdematous edges, and are usually covered with a dirty yellow-coloured membrane. Towards the vaginal orifice an erysipelatous condition of the mucous membrane is not uncommon, and this may affect the vaginal walls higher up. The endometrium is found covered with purulent débris when it is affected. The deeper layers of the uterine wall are not affected except in cases of severity, when they are œdematous. Round the cervix the cellular tissue is sometimes found in a state of phlegmon, or there may be abscess formation. In cases where there are no wounds of these passages they do not usually present any morbid appearances. The lymph channels are enlarged and may have local collections of pus in their course. Parametric inflammation is common, as are salpingitis and ovaritis of every degree. The peritoneum rarely remains unaffected, but that part alone may be affected in the immediate neighbourhood of the generative tract (peri-metritis), but general peritonitis is common. The deadhouse appearances of these conditions are so well known that I do not propose to waste time in describing them; but some time must be devoted to the consideration of the condition of the placental site and to the pathology of thrombosis. Quite apart from the thrombosis natural to the uterine sinuses after the removal of the placenta, it is known that simple thrombosis in the uterine and pelvic veins, spreading from there to other parts, is not

[3] THE LANCET, Nov. 6th, 1880.
[4] THE LANCET, Dec. 7th, 1889.

rare during the lying-in period. Embolism is also met with, and in the event more especially of the embolus or thrombus becoming the home of bacteria any organ may become the seat of acute septic inflammation; of these the most commonly affected are the lungs, pleuræ, and kidneys, and ulcerative endocarditis is not uncommon. As a rule, the thrombi of the placental site are not affected by pathological changes, doubtless because of their early organisation; but in acute and prolonged cases they break down under the attacks of the bacteria, become purulent, and the inflammation may spread from them to the cellular tissue round them, and the abscesses which result may follow the track of the large veins into the pelvis. The fact, however, is of importance that the uterine thrombi do not, at an early period of lying-in, become the seat of septic changes. Speaking generally, a thrombus varies in colour. In a vein which is doubly ligatured, and thus protected from the disturbance of movement, a red thrombus is found, whilst a thrombus found in a spot in an artery where the epithelial lining has been destroyed or a foreign body introduced, and which has thus been exposed to the disturbance of the circulation, will be white. Again, where the disturbance is not sufficient to produce a purely white clot the colour is mixed. The thrombi of the uterine sinuses are for the most part of the red variety. The thrombus having been formed, one of two things may happen to it—either it becomes organised or it undergoes softening. Organisation is effected by the growth of vessels into the substance of the thrombus; then, by the activity of the wandering cells, which penetrate from without inwards into the mass, a connective tissue network is formed. Vascularisation is far advanced as early as the sixth or seventh day in favourable cases, but this process may be very materially delayed. After the wandering cells have produced the network of connective tissue the next process is contraction of the tissue thus formed, and by contraction from the centre of the mass to its periphery a new lumen is produced or irregular contraction produces the sinus-like degeneration of Rokitansky, and it is this latter process which probably occurs in the thrombi of the uterine sinuses. Calcification is another method by which nature terminates thrombosis; but softening is the method which particularly concerns the question under discussion. If organisation is not effected in a thrombus, the innermost layers of the thrombus, those farthest removed from the vascular wall, whose action on the life of the blood is too well known to be disputed, lose their consistence, and become transformed into a thin oily liquid, in colour varying with the original colour of the thrombus. Now this simple process may become a septic one, supposing that bacteria gain access to the softened thrombus. It has already been explained that it is exceptional to find that bacteria have attacked the uterine thrombi coming from the uterine surface, and it is exceptional because of their early organisation; but a thrombus may form, and we know that they do form, in the pelvic veins during the lying-in period, and in those cases where sepsis follows the softening of a thrombus the bacteria are conveyed by the blood to it. Cocci of putrefaction are, in conditions of health, not to be found in the blood, however numerous they may be in the intestine; but wherever individual parts have lost their vitality there they are found. Whence they come is a matter of speculation, but a consideration of the various facts which have been stated as to the natural history of bacteria leads to the belief that it is not improbable that the bacteria already existing in the blood, finding a suitable midus, develop both structurally and in function, and acquire the character of those microbes which we know are concerned in the pathological processes connected with putrefaction in blood clot.

The question as to the way in which the parasitic bacteria produce the symptoms of disease as we find them at the bedside may now be considered. Mr. Panum in 1856 discovered the fact that one of the products of bacterial life and activity is a class of alkaloid bodies to which the name of ptomaines is given. Dr. Watson Cheyne states: "Although in general one may accept the occurrence of causes of pure sapræmia—i.e., pure ptomaine poisoning—it does not follow that it is of frequent occurrence"; and, again, he admits that sepsis may be produced by organisms which do not spread into the living tissues, or at least do not spread much further than the surface, but attack the body by the formation of ptomaine, peptonising ferments, fibrin ferment, &c. At any rate, the poisonous qualities of ptomaines are now well known, and it can be asserted with confidence that symptoms of disease follow the introduction of some of them into the body. The question as to how microbes set up suppuration, which is a frequent property of theirs, and other morbid phenomena is a point at present not known with accuracy, and I must be content with the statement that their powers in these directions have been proved without question. The characteristically original and able work of the late Dr. L. G. Wooldridge is suggestive of the idea that the full elucidation of this subject will be derived from chemical investigations, and especially those in connexion with the various conditions of the blood. So much having been said about the pathology of the diseases under review, a description of them is now appropriate, and can be given with some explanation of what lies at the basis of the symptoms.

In his lecture[5] Dr. Matthews Duncan described a case of sapræmia or pure ptomaine poisoning. It was his habit to separate the group of symptoms which he covered with this term as a distinct class. I do not follow him in this, because I cannot do otherwise than look upon this group of symptoms in their first commencement as being the earliest possible expression of a puerperal fever, due to decomposition in pieces of decidual tissue which have not been expelled from the maternal organs at the proper time. The symptoms are first a rigor, or possibly a succession of rigors, a rise of temperature in the body, and a rate of pulse and respiration commensurate with that rise. The discharge is usually offensive, but a note will be given of a case where there was no such fetor, which cannot be looked upon as a necessary feature, more especially when the antiseptic douche is given daily after delivery and the labour has been conducted with such antiseptic precautions as we are at present cognisant of. The case was that of a secundipara, who was brought to bed under all the best conditions which money could procure. I had not been engaged to attend the woman, so I knew nothing about her antecedents. On my entry into the lying-in room I found the child's head already in the world, and soon afterwards it was born dead. There were no signs of decomposition, and I judged from the evidence which I obtained that it had not been dead for more than twelve hours. The placenta was born naturally, and after its birth a douche of 1 in 2000 of corrosive sublimate was given. On the evening of the second day I was sent for hurriedly by the nurse (who was thoroughly competent) because a rigor had taken place and the temperature had risen to 102° F. A vaginal douche of corrosive sublimate, of the same strength as after delivery, was administered, and quinine in two-grain doses was exhibited every four hours. In the morning the temperature was normal. The following evening another rigor and rise of temperature caused me to be summoned to the house. On douching the vagina again a small shred of membrane, jelly-like in consistence, came away, and from that time no further symptom occurred. There was no other cause in this case for the symptoms except the retention of this small shred of membrane. I do not recollect on any other occasion seeing so small a cause for such a disturbance in the symptoms. The following case, under the care of Dr. Matthews Duncan, shows a more severe course of disease, and is a typical instance of what may arise if a case of this kind is not treated at once, and I may say with regard to my own case that if my object had not been attained on the last occasion of a rigor by douching the vagina I should have explored and washed out the uterine cavity. The case was described as follows. The discharges became fetid on the seventh day, but they had been very copious and bloody from the first. Rigors appeared on the eighth day, and were repeated daily. On the eleventh day the patient was described as being pale, sick, frequently vomiting, and troubled with diarrhœa. The respiration was hurried (44), the pulse 146, and the temperature 104·2°. There was a copious flow of very offensive lochia, a piece of placenta was removed from the vagina, and subsequently, under chloroform, more from the uterus, which was washed out with carbolic acid (1 in 30). Dr. Matthews Duncan reports that there was no process of recovery; there was only convalescence.

Some points of interest are brought out in the case, and first there is the question of the lochia, and I think I cannot do better than refer to a paper by Dr. Matthews Duncan in his Researches in Obstetrics. It is a translation of a paper by Wertheimer.[6]

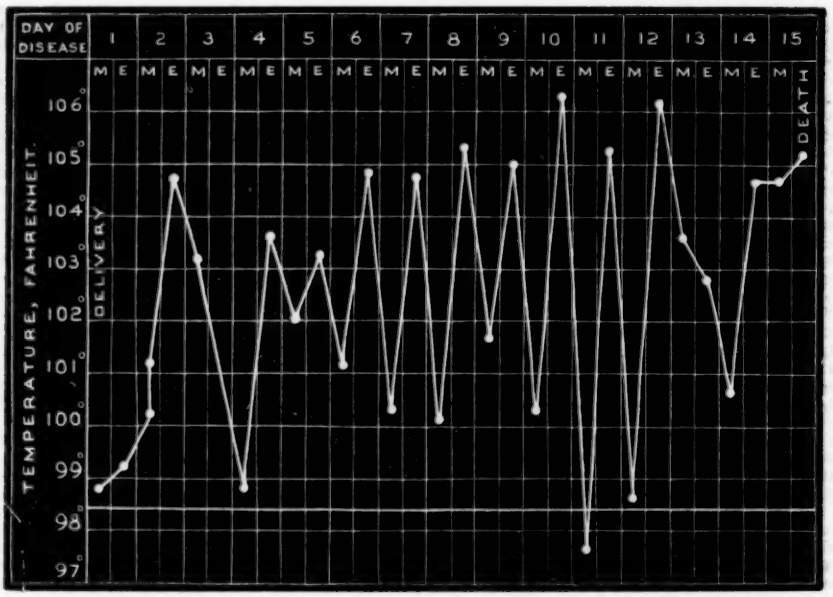
"1. Immediately after the end of labour the flow from the genital passages, often for several hours, even sometimes for a day, is purely bloody, with loose fibrinous clots.

[5] THE LANCET, Nov. 6th, 1880.
[6] Virchow's Archiv, Bd. xxi., 1861, p. 332.

"2. Thereupon there follows, or begins at once after the third stage of labour, the exudation of a serous fluid, which always brings with it smaller or larger portions of vaginal mucus, which, mixed with blood-corpuscles (or clot) deposits itself in any vessel as a viscid, stringy sediment. This serous fluid, according to the greater or smaller amount of blood-corpuscles which it contains, is of a more deep dark or a bright red colour, and is known as lochia rubra seu cruenta; or it is light red, fleshwater-like, and has got the name of lochia serosa. The first kind belongs generally to the two or three first days; the second kind to the third, fourth, and often to the fifth day after labour. I have also observed that from the third day only a pale red secretion was discharged, the lochia cruenta consequently completely disappearing. The secretion on these days contains for the most part many suspended flocculi (*faden*), and has a peculiar smell and alkaline reaction. The microscopical constituents are as follow: (1) blood-corpuscles; (2) epithelial scales, elliptical and polygonal, having an appearance of being granulated, or clear and having a nucleus (they compose the flocculi); (3) mucous corpuscles; (4) mucous granules and considerable aggregations of granules; (5) vestiges of decidua and placenta were twice found. Chemical constituents: (*a*) organic albumen (albuminate of soda), mucin, and saponifiable fat; (*b*) inorganic chlorides, phosphate of an alkali, iron, and lime salts. The fixed constituents varied from 267 to 86 per 1000.

"3. From the fifth day to the seventh or eighth the secretion is often still partly of a serous nature: (1) the blood-corpuscles have diminished in quantity, and continue to diminish from day to day; their contour is generally indented, their shape changed, their appearance pale. On the other hand, the secretion has acquired a new microscopic constituent, which quickly increases in quantity from day to day, and at last gains the preponderance. This is (2) pus-corpuscles. The secretion maintains a mixed colour, varying from dirty brown, through chocolate brown, rust-coloured, brick-red, yellow-red, yellow-reddish, to green-white or grey colour. The odour of the secretion is peculiar and disagreeable; the reaction of the serum is generally neutral. Besides the enumerated microscopical constituents there are still found in the secretion in these days: (3) epithelial scales; then the polygonal and elliptical forms are displaced gradually by the occurrence of the round; (4) granular cells; (5) granules and fat drops. The fixed constituents vary between 108 and 293 per 1000.

"4. From the eighth or ninth day until the end of the flow the secretion maintains the same constitution, on the understanding that no further bleeding supervenes; it has a greenish-yellow, white, or grey appearance, the consistence of cream, and is of neutral or acid reaction. The microscopical constituents are as follow: (1) pus-corpuscles, the paramount constituent. (2) Epithelial scales have greatly diminished in number, and they are generally found only round, larger or younger—later, after the fourteenth day, they are again elliptical or polygonal. (3) Nucleated cells. (4) Spindle-shaped tailed corpuscles of young connective tissue, enclosing fatty granules; they are observed on the eighth, ninth, tenth, eleventh, and twelfth days. (5) Granules and fat globules. (6) Crystals of cholesterine. Chemical constituents: (*a*) organic—albumen (albuminate of soda), mucin, saponifiable fat, cholesterine, no pyin present, and volatile acids inconstant; (*b*) inorganic—chlorides and lime salts. The fixed constituents are: from the eighth day, 173 per 1000; from the fifteenth day, 136 per 1000; from the twenty-first day, 144 per 1000. (7) The volatile acids can only be made out when the reaction of the secretion is strongly acid, so that a strip of damp blue litmus-paper hanging free on a cylindrical glass is reddened on the application of a slight heat or without it. (8) Products of decomposition, as ammonia, and crystals or triple phosphate, which Dr. Sherer describes, I have not observed, nor the development of sulphuretted hydrogen. (9) Clots of fibrin are found in the lochial secretion only when a fresh bleeding occurs in the uterus. (10) The peculiar disagreeable smell of this secretion is almost constant from the fourth or fifth day, only it is occasionally absent or weak; it did not always appear to me to be of the same quality—different in the fourth or fifth day to the eighth or ninth from what it generally is in the later days, when it recalls the odour of pus. It remains to be proved whether the smell depends on a volatile acid whose presence cannot always be proved. (11) Dr. Sherer, who supposes that in the lochial secretion there is an epithelial exfoliation of the whole sexual system, and consequently of the uterus, says he has found in the secretion cylindrical and ciliated epithelium, and Dr. Kasper notes the same thing. I have never met with these forms as constituents; their appearance in the lochial secretion is impossible, according to what the physiological part of this work shows regarding the interior surface of puerperal uterus. (12) A not constant, but rather accidental microscopical constituent of the lochial secretion is the trichomonas vaginalis. It has certainly an unmistakable resemblance to cylindrical ciliated epithelium, for which many have taken it and contested its existence as a distinct being. Its occurrence in the lochial secretion is not uninteresting, for here it is impossible to confound it with cylindrical ciliated epithelium. (13) It has still to be noticed that the


DAY OF DISEASE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
M E M E M E M E M E M E M E M E M E M E M E M E M E M
TEMPERATURE, FAHRENHEIT.
106° 105° 104° 103° 102° 101° 100° 99° 98° 97°
DELIVERY
DEATH

blood-corpuscles frequently disappear from the secretion very early at the sixth day, at other times very late—as first at the twelfth day; that at different periods of the lochial secretion they appear in increased quantity in consequence of bleeding; lastly, that the mucous, viscid, stringy constituent is observed sometimes in greater, sometimes in smaller, quantity."

This is word for word the full account of this secretion, which Dr. Matthews Duncan translated from Wertheimer, and the significance of fetor in the discharge will now receive attention. Normally it will be observed that the lochia have a peculiar odour, which is due to a volatile fatty acid, and it is the same class of volatile substance to which the odour of labial abscess is due. The fetor varies in different women, and some habitually have fetid lochia in conditions of healthy recovery. The important point, though, to be observed appears to be this. Up to the eighth day is the period in which cases of the two first classes of puerperal fever appear, and they usually arise not later than the fifth day, and it is not till the latter day that pus-corpuscles are found. Now I take it that these corpuscles, though structurally the same as the cells found in pus, are not to be looked upon as anything but products of nature's healthy process of waste and repair, and it is worth while to pause and consider why it is that, as the process of waste proceeds, the tendency to disorders of the first two classes inclines to diminish. It certainly appears to connect something which takes place at the time of delivery with the cause. Now the abnormal occurrences which may take place at or immediately after delivery are: (α) retention of decidual remnants; (β) traumatism; (γ) retention of lochia; and (δ) introduction of bacteria.

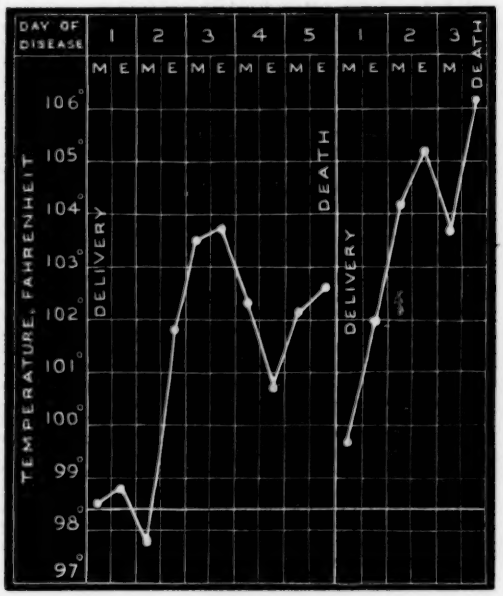
(α) *Retention of decidual remnants.*—It is not easy to understand why these may be retained even for months without decomposition occurring even when antiseptic precautions have not been taken, but certainly in cases where such retention has existed for any length of time they are kept alive by continuity of circulation with the mother. As a general rule decidual remnants are early attacked by bacteria and symptoms of septic absorption appear.

(β) *Traumatism.*—This is a fertile source of sepsis in the lying-in woman. Wounds are a source of sepsis: firstly, because of the discharge proper to any open wound; and, secondly, because they offer a surface from which absorption can readily take place. Bruises are important because the blood clot may soften.

(γ) *Retention of lochia.*—Dr. Matthews Duncan refers in his "Researches in Obstetrics" to what he calls the retentive power of the abdomen. Now, whether this force exists or not, or however it may be constituted, it is an undoubted fact that on the expulsion of the placenta in many women it is possible to hear and feel air escaping from the vagina with the blood which follows. It is not so in all women. Again, some women expel air from the vagina at different times. I do not propose to consider the mechanics of this phenomenon here; it is sufficient for my purpose to note its existence. It is of importance, because in some women certainly, and in all women probably in some degree, air has a tolerably free access to the vagina, and even to the uterus after delivery; and wherever there is free access for air there is free access to bacteria. Now, lochia may be retained in the uterus owing to a flexion or they may be retained by this power of the abdomen; if they are retained long enough and bacteria gain access decomposition of the lochia is almost certain.

(δ) *Introduction of bacteria.*—This most often occurs at the time of labour, and they are introduced either with the examining finger, hand, or instruments, or they may enter with air when the patient is douched or in the manner above referred to.

Puerperal fever of the two classes under discussion is dependent upon one or more of these four conditions. The first symptoms of the disease have already been noted and the description of the following stages will now proceed. Now this first stage is not always well marked; it may last for only a few hours or it may be prolonged, as in Dr. Matthews Duncan's case. In some cases the course of the disease from the first stage to the last is only a few days. I have copied from Spiegelberg some characteristic temperature charts, which are here reproduced. In describing the pathology it will be recollected that I traced the morbid appearances along two channels, the venous and lymphatic. The disease may, especially under appropriate treatment, remain localised to its point of origin; thus there may be purely catarrhal endometritis, but it is doubtful, in the case of the septic form, whether the disease ever remains purely localised. An abscess which has formed in connexion with a stitch in the perineum, if treated in time, may not produce further trouble, but it is not impossible that a woman should suffer severe septicæmia from poison, originating in an abscess round a stitch in the perineum. Whether the lymph or venous systems be implicated, there is no exact date at which the entrance of the poison may not be effected. In cases where the ptomaine phase is not well marked the symptoms are usually apparent within three days of delivery, cases are rare after the fifth day, and Spiegelberg says that he has never seen one after the first week; but he separates cases of traumatic parametritis secondary to the suppuration of some wound where the initial symptoms are not well marked. It may here be observed that it has been pointed out by Roger and others that the introduction of certain pathogenic organisms together with weakened pathogenic organisms render the latter more virulent, enabling them to grow and give rise to the specific products in the body; and as recorded in THE LANCET of Dec. 7th, 1889, Hueppe and Wood's investigations with the anthrax bacillus tend in the direction of a converse proposition. Again, Mr. Watson Cheyne seems to indicate that the action of ptomaines is not so simple in some cases as in others, and that their action may be increased or modified by the products of the activity of bacteria, or that even the bases and salts produced by that activity on albuminous sub-



stances may, under some conditions, produce symptoms of disease. Again, Brieger has shown that the poisons formed by the putrefactive decomposition of proteid bodies varies with the composition of those bodies. For instance, he found that the typhoid bacillus, when cultivated in peptone, forms no poison, but when cultivated in meat jelly or infusion it forms two poisons, which he had, at the time when he wrote, been unable to completely isolate. The temperature under which the putrefactive processes occur greatly influences the rapidity with which the albuminous substances split up and the nature of the products which they yield. Dr. Lauder Brunton thinks, too, that it is probable that the quantity of moisture in the albuminous substance itself, or in the atmosphere generally, also affects these processes. Electrical conditions of the atmosphere likewise influence them. Again, some of the products are antagonistic to others and a mixture of them may favour further decomposition and inertness.[7]

In view of the varying conditions which the maternal parts may offer for consideration after delivery it cannot be a matter of surprise that the date of the commencement of disease is uncertain, especially when the above-mentioned

[7] Dr. Lauder Brunton on Poisons formed from Food and their Relation to Biliousness and Diarrhœa. The Practitioner, 1888.

facts are fully considered. The preliminary rigor, which is described as being sudden in cases where ptomaine poisoning is alone present, is also sudden when the symptoms are due to the growth of the bacteria in the circulation and lymphatic system, and this rigor may be repeated. Repetition of the rigor rather indicates the attack of the circulatory system. The temperature chart varies with different conditions: it may sink to a low level or it may be hectic in type, and the evening rise may exceed even 105°; but the charts do not, as a rule, present any marked features which would separate them from those of traumatic septicæmia and pyæmia. In cases where the lymph channels are attacked the onset occurs soon after delivery and the abdomen becomes rapidly distended. Pain in the abdomen is very often absent. Constipation is usual, and the diarrhœa sometimes met with is very often set in motion by the exhibition of purgatives; if once set up it may become uncontrollable. As the disease progresses the pulse, which was at first of moderate rapidity (from 104 to 120) becomes more frequent (from 140 to 160) and very small; respiration is hurried, the clammy sweat of sepsis appears, collapse sets in, and death ensues, as a rule, not later than the seventh day. The venous variety appears later, as a rule, but before the end of the first week. The onset of the fever is not so rapid. The first rigor is acute and prolonged; it is succeeded by a feeling of heat and perspiration, after which the temperature sinks, more or less rapidly, almost to normal. A period of remission follows in which the temperature is not extraordinarily high, and in which the diurnal variations are well marked; the patient feels better until another rigor appears. Other cases in contrast with these typical examples of erratic rigors and of intervals of apparent improvement present typhoid conditions, and it is these which Spiegelberg thinks are the purest and most acute form of venous sepsis. Local affections are the rule; there may be inflammation of the uterine lining or there may be parametritis. Peritonitis is usually absent. If the patient survives metastatic inflammation appears, and as a rule these cases, with the exception of those presenting typhoid symptoms, run a more prolonged course than do those of the lymphatic variety, and in the event of metastatic inflammation not occurring recovery may take place. Combinations of venous and lymphatic septicæmia are, it may be judged, not rare. It is not seldom that one hears from practitioners accounts of enteric fever following delivery, and it appears to be accepted by many, I suppose, reasoning from these cases, that drainage plays a large share in producing puerperal fevers. There can be little doubt, judging from the cases which have come under my notice, that many of those described as enteric fever are really cases of venous septicæmia presenting typhoid symptoms. I recollect one case in which a woman was described as having suffered from typhoid fever after delivery, but she had a definite attack of enteric fever not long afterwards and before the birth of the second child. This venous variety of septicæmia leads me on to describe the third variety or that form of puerperal fever which is caused by the softening of a venous thrombus or embolus. I know of no other kind of true puerperal fever which has any foundation for its existence except in the imagination.

(To be continued.)

ON THE NATURE AND TREATMENT OF PYORRHŒA ALVEOLARIS, AND ITS IMPORTANCE TO THE PHYSICIAN.

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"PYORRHŒA ALVEOLARIS," or Rigg's disease, is a term applied to a condition characterised by the presence of pus between the gums and the necks of the teeth, and although usually overlooked or unrecognised by the practitioner of medicine it is one of great importance. Modern pathology teaches that upon it may depend, not only local troubles in the mouth, but also disturbances of the whole system, particularly of the digestive organs. The tendency of modern medicine is not to rest satisfied with a diagnosis of "debility or anæmia," but to try to search out an initial cause. In an unrecognised pyorrhœa there may, I venture to assert, be often found a clue to the elucidation of departures from health, the significance of which we have been unable to discover. Pyorrhœa alveolaris acts in a twofold manner in the causation of disease: first, the pus with its multitude of putrefactive organisms may be swallowed; and, secondly, it may be absorbed into the system. In the former case abnormal fermentations may be set up in the stomach contents, and in the latter event the continual absorption of pus or its toxines into the system is now known to be a fertile source of neuritis and neurasthenia. It is self-evident, therefore, that the subject should receive the attention of the practitioner, and that he should be able to diagnose and treat cases which may come under his notice. I shall attempt in this article to point out the main facts, and endeavour to supply a working knowledge of a subject which is not included in the curriculum of the student of general medicine, although it is of such importance. Outside the dental domain the subject is remarkable for its extreme exiguity, but reference to it may be found in some recent researches on septic intoxications. The condition of pyorrhœa alveolaris accompanies several distinct diseases, which must be accurately differentiated. I will describe them in their order of severity. Before doing so, however, it will be as well to briefly describe the structure of the gingivæ, or gum margins. The free margin of the gum is covered on its exposed surface by a very dense squamous epithelium, which is necessary to enable it to withstand the abrading action of food during the act of mastication. Under this lies a layer of softer epithelial cells covering a series of papillary projections from the subjacent fibrous tissue. This composite structure is firmly attached to the neck of the tooth and the periosteum of the alveolar wall by the dental ligament, which consists of radiating bundles of fibrous tissue. The epithelium that covers the inner surface of the gum margin consists of very soft, round or polygonal cells, and is of considerable depth; it emits a profusion of small rounded cells which are to be found in abundance in the saliva and are usually called "mucus corpuscles." For this reason it has been termed the "gingival organ." It is probable that this structure is not the sole source of the mucus cells in the saliva, but it will certainly account for many of them. The knowledge of this organ and its secretion is of the greatest importance to the physician, as the accumulation of these cells mixed with organisms under the free margin of the gum forms soft cheesy masses that so nearly resemble pus that they may be easily mistaken for it and thus lead the observer to make an erroneous diagnosis of pyorrhœa alveolaris. With these preliminary remarks I will proceed to the consideration of the conditions or morbid states which are accompanied by true pyorrhœa. These are (1) gingivitis, (2) calcic inflammation of the peridental membrane, and (3) phagedænic pericementitis.

GINGIVITIS.

It appears now to be quite certain that the gingival organs possess, in common with various glands of the body, the power of selecting and excreting certain poisonous matters from the blood, and that some of these substances, if present in any considerable quantity, cause hyperæmia or even inflammation in their passage. A notable example of this is seen in the inflammation of the gums caused by mercury and iodide of potassium respectively. Although each of these is a true gingivitis, yet owing to the salivary glands being at the same time affected it is usually spoken of as "salivation." A form of gingivitis is met with in scurvy and another form frequently attacks young people and accompanies anæmia and rheumatoid arthritis. In this last form of gingivitis the gums become red and swollen, and bleed from trifling causes. They are inverted, and the pockets thus formed are filled with pus-corpuscles and the micro-organisms of the mouth. The inflammation does not assume a destructive character, and there is little or no separation of the tissues from the necks of the teeth. Although simple gingivitis is usually transient, lasting but a few weeks, yet it is undoubtedly in some cases the starting point of graver diseases of the peridental membranes.

CALCIC INFLAMMATION OF THE PERIDENTAL MEMBRANE AND GUMS.

This condition may be defined as inflammation of the gums set up and perpetuated by the irritation of tartar on the teeth; of this there are two distinct varieties: (1) when the tartar is hidden from sight, being on the necks of the teeth below the edge of the gums; and (2) when it encrusts the buccal and labial surfaces of the teeth above the level of the edge of the gum. In the case where the tartar is deposited below the edges of the gums it is either in the form of a hard

brownish crust or as little nodules adhering very firmly to the neck of the tooth. It may be initiated by accumulations of micro-organisms or food under the edges of the gums, by constitutional causes leading to irritation of the gums, and by irritation from a neighbouring deposit of ordinary salivary calculus. After tartar has once been deposited upon the neck of a tooth a vicious circle is established which is very hard to break. When a slight deposit has once taken place it becomes an irritant which will itself perpetuate the disease; in fact, all varieties of tartar seem to possess irritating qualities of an extreme nature, which keep the border of the peridental membrane and the adjacent gum in a continual state of chronic inflammation, with the result of a continued slow increase of the deposit. The course of the disease from this point is as follows. After a longer or shorter period the lower border of the peridental membrane ulcerates and is gradually destroyed, and the neck of the tooth becomes exposed. *Pari passu* with this destruction of the peridental membrane the edge of the bony socket of the tooth is absorbed and the gum recedes with it, exposing to view the band of tartar surrounding the neck of the tooth. In cases where the tartar is deposited above the edges of the gums—the so-called "salivary calculus"—the calculus is sometimes dark, but it is usually of a light yellow colour; it is softer than the sub-gingival variety, it is deposited in larger quantity, and it is much more destructive in its effects. "No tissue retains its health if in contact with salivary calculus." It is continually on the aggressive, and follows up its destructive effects by fresh deposits in the space gained. In this way teeth are loosened very rapidly.

PHAGEDÆNIC PERICEMENTITIS.

The third and last condition of which pyorrhœa may be a symptom, but, unfortunately, the most serious of them all, is phagedænic pericementitis or destructive inflammation of the peridental membrane. It is not known for certain whether this disease is of bacillary origin, but the probabilities in favour of this view are preponderating. As to its etiology the following facts are known: 1. It is certainly infectious. It can be carried from person to person by the medium of instruments, and one tooth may infect an adjacent one. 2. It is in nowise hereditary, as is the disposition to the deposit of tartar. 3. Deposits of calculus predispose the patient to contract it. 4. It can only be successfully treated by the complete removal of the diseased tissue. This disease is an inflammation of a special type, which attacks the peridental membrane and destroys it bit by bit, the destruction of the alveolar walls taking place at the same time. For a long time the gums are unaffected beyond a slight reddening of their margins, and the presence of the disease is only suspected by finding that pus exudes from beneath the gum when pressure is applied to it. After a time a careful examination with a thin, blunt, flat blade will show that destruction of the peridental membrane is taking place, as the instrument will pass up further than it should along the side of the tooth into a little pocket which has already formed and contains pus. These pockets are the characteristic feature of the disease. They follow the length of the fibres of the peridental membrane, run up alongside the root of the tooth, may be single or multiple, and may attack the lingual, buccal, or proximal sides of the teeth. The tendency is eventually to destroy the whole peridental membrane as the pockets slowly widen, usually irregularly, until they encircle the teeth. All this time the gums may show no signs of disease externally beyond a certain amount of injection, and there may be little or no recession. At the same time that these changes are taking place in the membrane absorption of the alveolar wall is going on. In some cases, whilst the inner portion of the alveolar wall is being destroyed, deposit of new bone is taking place on its outer surface. The result of this is that the alveolar wall becomes lipped and by its everted edge holds the gum away from the tooth. The destruction of bone appears to be a process of true absorption rather than molecular necrosis and is the result of an absorptive action of the membrane itself, caused by the irritation of inflammation.

I now come to the consideration of a class of cases in which the two diseases (calcic inflammation and pericementitis) are combined. It is exceedingly common to find calcic inflammation from the deposit of calculus, and phagedænic pericementitis further up towards the apex of the root of the tooth. For purposes of diagnosis I will divide all cases of pyorrhœa into two groups. 1. Here there is visible salivary calculus or recession of gum and exposure of the roots of the teeth. In addition to the diagnosis which can be made out at sight, the practitioner has to establish chiefly whether there is present pericementitis or whether the calculus is the sole exciting cause. Where there is no absorption of gum it will be necessary to find out whether a serumal calculus exists in addition to the salivary one that can be seen. The prognosis will be much more favourable if only a salivary calculus has to be dealt with. The first thing to do is to remove the salivary calculus entirely. Search must be made beneath the gum for serumal calculus and for any pockets that may be present in the peridental membrane. If no pockets are detected, and after the last of the salivary calculus has been removed, the peridental membrane being intact all round and attached to the root of the tooth, the operator is justified in assuming that there are no points where the peridental membrane has been destroyed much further than the calculus has extended. If such is the case he may assume the absence of phagedænic pericementitis. If, on the other hand, when the calculus has all been removed he finds that the membrane has been destroyed to points much further than the calculus has extended on the root of the tooth, and that the wall of the alveolus, instead of being destroyed as a whole, has been eaten away somewhat in the form of a fissure extending to the apex of the tooth, leaving angular prominences of bone, thickened, with everted edges, he may conclude that the salivary calculus is complicated with the more serious disease. 2. In the second class of case which presents itself for diagnosis nothing wrong can be seen with the gums, except, perhaps, a slight sponginess and congestion, and the pus which wells up alongside the teeth when pressure is made. Salivary calculus is here excluded, and the disease may possibly be either simple gingivitis, serumal calculus, pericementitis, or the combination of the latter two. Excluding tartar and pockets, the case will be one of simple gingivitis. Tartar under the gum without pockets will be calcic inflammation pure and simple. The presence of pockets will indicate, as in the case of salivary calculus, the presence of phagedænic pericementitis. In order to ascertain whether subgingival calculus is present or not instrumentation should be resorted to.

TREATMENT.

The treatment of pyorrhœa alveolaris is of great importance to the general practitioner and deserves his consideration for the following reasons: (1) With a little practice and a few simple instruments he can treat this condition quite as well as a dentist; (2) in country districts efficient dental aid cannot always be obtained; (3) it is illogical for him to try to cure a patient of such diseases as rheumatoid arthritis and dyspepsia, which may possibly be caused by continual absorption of small quantities of pus, as long as pyorrhœa alveolaris is allowed to remain untreated; (4) patients in poor circumstances cannot afford to consult a competent dental surgeon, and it is hard that therefore they should be doomed to remain uncured of their malady; and (5) there is no reason why a purely surgical disease of the gums, which must be treated by purely surgical means, should be considered to be outside the province of a surgeon.

Simple gingivitis.—This condition presents no difficulty. If not due to mercury or iodide, a brisk purge, followed by vegetable acids, will usually do a great deal towards restoring the patient to health. As a means of administering the latter, nothing is better than the free use of oranges and lemons, as they also have the advantage of acting locally upon the parts themselves. At the same time an antiseptic should be used night and morning; for this purpose Listerine is an excellent antiseptic, a few drops of which may be poured upon the tooth-brush. In obstinate cases the practitioner must pack powdered sulphate of copper down under the edges of the gums with a wooden point for several days in succession, and order the patient to use the following mouth wash: Biborate of soda, one drachm; carbolic acid, half a drachm; rose water to eight ounces.

Calcic inflammation.—In the treatment of calcic inflammation every vestige of tartar should be removed, both salivary and serumal. This is quite an easy operation if performed with a knowledge of the right method and with proper instruments. The necessary instruments are the following: (1) two or three hooked or hoe-shaped instruments of various sizes for the removal of the bulk of the large concretions of salivary calculus, by a pulling motion, and a set of Howe's scalers for removing remaining portions, to be used in a similar manner; (2) a set of Cushing's scalers for removing with a pushing motion the last particles of salivary calculus and serumal calculi, and for probing for pockets; (3) a

hypodermic syringe with a special cannula for the application of medicated solutions to the peridental membrane; and (4) a properly shaped wooden point for packing sulphate of copper under the margin of the gum. The proper way to remove a calculus is to apply the chisel edge of the scaler to the point where it joins the tooth and gently press. The calculus will then come away readily. The greater part of the tartar can be removed without any difficulty by the novice; but the difficulty commences with the removal of the last small scales. A careful search should be made for these up under the edges of the gum, as a small particle overlooked will certainly keep up the irritation and prevent healing. If in any case the operator has excluded pericementitis, and healing does not promptly follow the removal of the tartar, he may be quite sure that some of it has been left behind. After the removal of the deposits peroxide of hydrogen solution should be syringed up under the gums, and the patient discharged with an antiseptic mouth wash and a suitable powder and told to report himself in a week. If the tissues are found to be turgid, thickened, and in a state of active inflammation a 20 per cent. solution of chloride of zinc should be applied with the syringe under the edge of the gums. If there is much destruction of tissue the patient ought to attend every four days and have the following mixture applied with a brush to the parts: oil of cinnamon, four drachms; oil of gaultheria, four drachms; carbolic acid (crystals), one drachm. I should here like to make my protest against the practice—which is too prevalent among dental surgeons—of removing with a chisel the lower margin of the alveolar process and peridental membrane in all cases where there is recession of gum and absorption of the process.

Phagedænic pericementitis.—The surgeon should remove all calculi and examine the alveolar processes and eroded portions for roughened or everted margins. All eversions of the alveolar wall should be cut off, all jagged points of bone removed, and all thick edges trimmed down or broken away. In all cases, whether tartar or bone has been removed or not, the operator should wash out with a syringe all the pockets with a solution of peroxide of hydrogen containing one grain of perchloride of mercury to the ounce, and afterwards syringe with a solution of 30 per cent. chloride of zinc. These two applications ought to be repeated every day for a week; first the washing with peroxide, then the chloride. The patient should be directed to attend every four days, and on each occasion the pockets should be syringed with peroxide as before; but instead of the chloride of zinc a few drops of the cinnamon, oil of gaultheria, and carbolic mixture (the formula of which has been already given) should be introduced with a brush.

TWO CASES OF INTESTINAL RESECTION AND OF REMOVAL OF CÆCUM.

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ALTHOUGH my limited experience only tends to corroborate the generally accepted opinion that resection of the intestine is accompanied by but little danger, presents but few difficulties, and requires no special apparatus when performed as a secondary operation on a suitably prepared patient in fair health, but that when performed to relieve the urgent symptoms of an acute lesion it is likely to be attended with grave danger and is only to be carried out with considerable difficulty, still the record of intestinal resection is not yet so extensive as to require an apology for publishing the three cases in which I have had to perform this operation.

CASE 1.—The patient in this case was an Egyptian woman about thirty years of age who had been operated on for strangulated left-sided inguinal hernia three months previously. The gut had been so severely nipped that the surgeon had contented himself with incising it, leaving an artificial anus. On coming under my care she presented a large excoriated surface in the left inguinal region, from the centre of which protruded, to the height of one inch, the everted mucous membrane of the distal end of the bowel. To the inner side of this there was a narrow channel, from which fæcal matter coming from the invisible deeply seated proximal end oozed continually. The fæcal matter contained large quantities of undigested food, and in order to prevent starvation, and at the same time to remove a great inconvenience, it was decided to resect the intestine. Forty-eight hours before operation the lower gut was washed out with copious enemata, and during the last twenty-four hours the patient received and retained four nutrient enemata, each containing two ounces of beef-tea, two drachms of cognac, and one egg. No attempt was made to sterilise the abdominal wall before operation, as the fæcal discharge was continuous. The patient having been chloroformed, a spindle-shaped flap of skin measuring five inches by two inches, was marked out around the anus and raised from the subcutaneous tissues right up to the neck of the constricted bowel, which was then firmly grasped underneath the flap by the handles of an artery forceps. The surrounding tissues were then carefully sterilised, the artificial anus being well swabbed out and plugged. The abdominal wall was now dissected through at the upper angle of the wound, the peritoneum being very carefully divided so as to avoid any possible injury to an adherent intestine. A finger passed into the peritoneal cavity served as a guide for the scalpel in separating the internal abdominal ring from the surrounding tissues. The skin flap, anus and ring, with attached coil of intestine, were easily drawn forwards sufficiently to allow the assistant to grasp the afferent and efferent bowel. The peritoneal cavity was shut off with wet boric wool sponges, and the bowel, having been emptied by gentle pressure of the fingers, was cut through above and below the anus, no contents escaping. A corresponding wedge-shaped piece was cut out from the mesentery, all bleeding points being pressed or tied. The two intestinal ends were then slipped over a gelatine tube, which somewhat facilitated the introduction of a double layer of sterilised silk Lembert sutures. The mesentery was sewn up, all the tissues were thoroughly cleansed with boracic solution and dried, and the intestinal loop was returned into the abdominal cavity, which was closed off with silkworm gut sutures layers. The subsequent history was quite uneventful; there was absolutely no peritoneal or intestinal reaction, and the wound healed entirely by first intention. The patient was fed by the rectum only for seven days, an enema being given every four hours. It is worth noting that during the eight days (including the day before operation) the patient received forty-nine enemata, to none of which was added any digestive agent, and which, containing in all ninety-eight ounces of beef-tea, forty-nine eggs, and ninety-eight drachms of cognac, were all digested and absorbed. The patient is now, seventeen months after the operation, in perfect health, except for a slight weakness (without protrusion) at the line of incision sufficient to necessitate the wearing of a truss. The patient was on the operating table for forty-four minutes.

CASE 2.—This was a case of intussusception in a child fourteen months old, who for two days had been alternately dosed with purgatives by the mouth and blown out with a soda-water syphon per anum. When admitted into hospital the child's condition was very critical, and it was only in deference to the entreaties of the parents that it was decided to operate. Laparotomy was performed, and after great difficulty, owing to intestinal distension, a quite irreducible intussusception of the small intestine was found a little to the left of, and above, the umbilicus. The whole mass was rapidly excised and the ends of the intestine brought together with a fine silk Lembert's suture in two layers, no tube or apparatus being employed. Before closing the sutures a large quantity of intestinal contents was allowed to escape. The operation lasted in all thirty-five minutes; the child rallied slightly from shock, but died ten hours after the operation. No post-mortem examination was allowed. The intussusception, when pulled out, measured thirteen inches.

CASE 3.—A male child four years of age was admitted into hospital as a case of hernia testis. On examination the whole of the left side of the scrotum was found to be replaced by excoriated, everted intestinal mucous membrane. On the surface of the tumour there were three depressions, two of which evidently corresponded to the afferent and efferent gut, while the third, which was much smaller, might have been caused by the vermiform appendix or by a Meckel's diverticulum. The child's general health being very good it was decided to attempt the relief of his local condition, which had existed as far as could be made out for some months. Under chloroform an incision was made right round the tumour along the line of union of scrotal skin with intestinal mucous membrane, and at the upper edge of the tumour the incision was

continued along the line of the inguinal canal. After some little difficulty the peritoneal cavity was opened above the internal ring, and after some dissection it was possible to drag out of the abdominal cavity the afferent and efferent coils, which proved to be respectively the small and large intestine. The hernia had evidently been due to the passage of the cæcum along the left inguinal canal; its cul-de-sac had sloughed and its mucous membrane had become inverted, presenting naturally the three openings of the small intestine, large intestine, and vermiform appendix. The abdominal cavity having been closed off with sponges, the remains of the cæcum with the appendix were removed by incisions, cutting through the large intestine above and the small intestine below. After all bleeding had been stopped the orifice of the large intestine was partly sewn up to reduce it to the size of the small intestine, and the two were then united by two layers of fine silk Lembert sutures, the mesenteric wound being closed in the same way. A little boracic solution was employed to cleanse the tissues, the abdominal wound was quite closed, and a small tube was left to drain the scrotum. The abdominal wound healed by first intention and the scrotal wound by granulation. Now (four months after operation) the child is perfectly well except for a slightly distended abdomen. It is to be regretted that no history could be obtained of the origin of the artificial anus, but the intestine certainly opened spontaneously. History is always a difficult matter with Orientals, and frequently is very misleading from its incorrectness. I may mention as a good example of the errors into which one may be led a case which occurred to me a month or two ago. A fellah woman, aged about twenty-five, entered hospital to be treated for an abdominal tumour. The history she gave was that before marriage she had been quite regular, that her periods ceased three months after marriage, that she became pregnant, and was delivered at the seventh month of a male child which died a few hours after birth. Since her delivery, which took place about a month before her entry into hospital, she had had no vaginal discharge and her abdomen had gradually enlarged. On examination there was a long sausage-shaped tumour to be felt on abdominal palpation, reaching from the pubes to the right hypochondrium, and being from four to five inches in width. In the perineum there was a swelling the size of a cocoanut, situated a little in front of the anus and bulging out the perineum and posterior vaginal wall. This tumour fluctuated right through to the abdominal swelling. On endeavouring to examine the uterus per vaginam there was some difficulty experienced in introducing the finger and no uterus could be reached. Urine was passed normally. On examination per rectum a large fluctuating tumour could be felt anteriorly. Diagnosis was not very clear; the probabilities seemed to lie between hæmatoma of the right broad ligament or some ovarian or ligament cyst to which a curious inclination downwards had been given. To help diagnosis a little of the contents of the perineal tumour was withdrawn by an aspirator and proved to be the usual treacle-like fluid produced by retained menses. What had been taken for vaginal mucous membrane displaced forwards by a tumour was the thick, absolutely impervious hymen, the canal which had been explored in the search after the uterus was the urethra dilated by marital efforts, and the woman's story was a fabrication which had been invented to deceive her husband and which had certainly misled us.

CASE OF HÆMORRHAGE FROM A BRANCH OF THE MIDDLE MENINGEAL ARTERY; TREPHINING; RECOVERY.

BY BERNARD RELTON, M.R.C.S.,
RUGBY;
AND
WILLIAM F. HASLAM, F.R.C.S. ENG.,
SURGEON TO THE GENERAL HOSPITAL, BIRMINGHAM.

A BOY sixteen years and nine months old, strong, well built, and left-handed, was playing cricket on Saturday, June 3rd, 1893, when he received a blow from the ball just above the right ear of such force that it was distinctly heard by all the players as a loud report. He felt "a little dizzy," and though advised to stop playing he continued his innings. After his side were all out he went on to bowl and took two wickets, but in the middle of an "over" he said to the captain that he "felt queer" and asked to be "taken off." He then "went into the field," but feeling worse he left the game and walked home, a distance of only a few hundred yards. The accident happened at five o'clock, and he got home at six. On reaching home he told his friends what had happened, and said that he felt ill. He was then sick and soon lapsed into a semi-comatose condition. At eight o'clock Mr. Relton saw him, and found him lying in bed in an unconscious state, from which it was difficult to rouse him; his breathing was somewhat stertorous, pupils equal and acting, pulse slow and full, and temperature subnormal, but there was no paralysis whatever. He remained in much the same condition until Tuesday, June 6th, when some paralysis was for the first time noticed; it began in the left leg and by the evening had spread to the left upper extremity and left side of the face. On the following day the paralysis was even more marked and all reflexes were absent; there was also complete loss of sensation over the paralysed area; his pulse became slower and his condition one of great gravity. Feeling certain that unless relief was afforded by operation the patient must speedily die, Mr. Relton strongly urged this line of treatment, and accordingly wrote to Mr. Haslam to come over on the following day in order to carry it into effect. On Thursday morning the unconsciousness was somewhat less marked, but the paralysis was as complete as ever, and in the afternoon it was decided to operate. After the head had been shaved there was no sign of bruising of the scalp, and the only sign of injury was a slight abrasion at the extreme tip of the right ear. Chloroform having been administered the bone immediately above the ear was exposed by turning up a semicircular flap, but no line of fracture was seen. A circle of bone was then removed by a three-quarter-inch trephine from a point an inch and a quarter above the auricle, but no clot was found and the dura mater seemed to be normal. A second circle of bone was then removed in front of and slightly above the level of the first, and though no clot was exposed there was, on depressing the dura mater at the upper and posterior part of the hole, a definite oozing of blood from between the bone and the dura mater, which suggested that the lesion was situated in this direction. A third circle of bone was therefore removed from a position above and behind the second, and again no clot was found, though there was a freer oozing from between the bone and the dura mater, and on passing the spoon-end of a director between the bone and this membrane small portions of recently coagulated blood could be removed. It was therefore evident that hæmorrhage was taking place, probably from one of the smaller branches of the posterior division of the middle meningeal artery; but as this was obviously slight in amount it was not considered advisable to extend the operation with the object of finding its exact seat, as it was thought that, the intra-cranial pressure being relieved, the brain would probably expand and check any further hæmorrhage. The wound was therefore sewn up and dressed with sal alembroth gauze. On a careful examination after the operation of the circles of bone removed by the trephine a fissured fracture of the internal table was found in the third piece. This fissure traversed the junction of the outer and middle thirds of the fragment and could be seen passing through the thickness of the bone in an oblique direction, so that had it reached the outer table it would have done so at a distance of a quarter of an inch from its starting point on the inner table. As this fracture was not visible from without it is impossible to say how far it extended, but its occurrence points to the probability of the hæmorrhage having occurred in its line—in such a position, in fact, as was ascertained at the operation. On June 9th the patient was more conscious; the pulse was 54; there was very little pain, and the hemiplegia was almost complete, but on scratching the sole with a pin there was slight movement in the big toe. In the evening he seemed to be better, and asked if he might have some fruit; the plantar reflex was more marked, the whole foot responding to the stimulus. The next day he was worse, having had a bad night; the pulse was 50. He felt great pain in the head; plantar stimulation produced movements in the foot, leg, and thigh. In the evening the pain in his head increased and his pulse was worse, but he was able to move his arm. On June 12th the wound was almost healed, except at one point, where there was a fluctuating swelling; here a tube was inserted, and about an ounce of bright blood was let out. After this he went on very well until the 27th, when he felt great pain in his head, was very sick, and became more unconscious; the wound was puffy, and there

was a fluctuating swelling from which blood was let out. On the following day (the 28th) the temperature rose for the first time since the operation to 101°F.; the wound was still puffy. The next day an opening was made through the line of incision and some pus let out. From this time his recovery was uninterrupted. The patient was examined on Nov. 25th and found to be quite well; the paralysed muscles had completely recovered their power and tone; he had no headache or any disturbance whatever except some left hemiopia, which, however, was rapidly passing off. From the time of a complete return of consciousness he complained of double vision at times, and on examining his field of vision it was found to be deficient to the left. The optic discs were normal.

Remarks.—1. The history and mode of onset clearly pointed to there being a gradually increasing pressure on the brain due to hæmorrhage, and that this hæmorrhage was from a small branch of the middle meningeal. 2. Unconsciousness preceded the paralysis by nearly three days, suggesting that the seat of the hæmorrhage was not directly over the motor area. 3. The paralysis could, therefore, be accounted for either by the motor area suffering as the intra-cranial pressure gradually increased, or by assuming that a hæmorrhage behind and below this area was causing a sufficient amount of local pressure to interfere with the fibres passing from this region through the posterior part of the internal capsule to the crusta, thus stopping the passage of impulses from the cortex to the muscles. 4. This latter view is supported by what was found at the operation, for this clearly demonstrated that the symptoms were not due to the presence of a large clot directly over the motor area, as has been the case in many of the reported cases of middle meningeal hæmorrhage practically identical from a clinical point of view with this; but it showed that the seat of the hæmorrhage was in a position posterior and below the motor area, where a local excess of pressure might very well affect the afferent paths from that part of the cortex. Further, the fact of there being some interference with the visual mechanism, as shown by double vision and hemiopia, and that the hemiopia was the last symptom to disappear, is evidence in favour of this view, as hæmorrhage in this situation would readily compress those fibres passing from the occipital lobe forwards to the eye. 5. The operation was undertaken in spite of the patient being a little more conscious in order to secure, if possible, the bleeding point, or, if not, to allow a free exit for blood, and thus by relieving the pressure on the brain to enable this to expand and exercise some pressure on the seat of hæmorrhage. Further, assuming that the hæmorrhage had stopped by itself, and without any operative interference, there was yet such pressure on the brain as would leave it permanently damaged, unless the blood was completely absorbed without leaving any residual thickening. 6. The two hæmorrhages subsequently to the operation produced no ill effects, as the blood was able to escape from within the skull, and to be removed by merely opening the wound at one point. 7. After these no further bleeding took place, owing probably to the brain occupying its proper position and pressing the dura mater against the bone. 8. The marked improvement after the operation, followed by complete recovery, fully justified its performance.

THE DISSEMINATION OF TUBERCULOUS DISEASE BY MEANS OF INFECTED DUST.

BY E. CLIFFORD BEALE, M.A., M.B. CAMB., F.R.C.P. LOND.,

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THE theory has been so readily established that tuberculous disease may be, and probably often is, conveyed into the receptive lung by means of inhaled dust, and precautions against the possibility of such conveyance have been so widely advocated, that it would seem to be superfluous at the present time to offer any observations or criticisms which might tend to throw doubt upon so simple and satisfactory a demonstration; but, however satisfactory the facts may appear to be when looked at from the purely experimental point of view it must be confessed that from the clinical standpoint they admit of considerable discussion. In order to satisfy the clinical mind it is necessary that evidence should be forthcoming to prove that those who are especially liable to the inhalation of infected dust should also be more prone to tuberculous disease than others who have not been so exposed. It is to the records of the hospitals for the treatment of phthisis that we should naturally turn for such evidence, and more especially to the records of the years anterior to the publication of Dr. Cornet's observations. It has, however, been abundantly proved that no such evidence is obtainable in this country. To take the experience of the chest hospitals at Victoria-park and at Brompton respectively, the figures collated and published by Dr. Andrew and Dr. Theodore Williams made it clear that no special liability to tuberculous disease could be demonstrated amongst the medical and nursing staffs of these hospitals during a period of twenty years. Quite recently Drs. Heron and Chaplin, in an article entitled "The Relation of Dust in Hospitals to Tuberculous Infection,"[1] published the results of a series of experiments made upon susceptible animals by actual injection of dust taken from wards occupied almost exclusively by tuberculous persons, and have shown that such dust possessed but little infective power. From these observations it must be concluded that the dust of a consumption hospital is not especially dangerous to those who must of necessity inhale it, nor does it always set up tuberculous disease in susceptible animals when introduced by way of direct inoculation. It is an old-established theory that dusty occupations are to be reckoned amongst the predisposing causes of tuberculous disease of the lung, and modern research has grafted upon that the view that such dust must be infected with tubercle, and that it becomes so infected by admixture of particles of dried sputum containing the bacilli. In the trades of the miner, the grinder, or the feather-sorter, although there is much dust, there is no direct likelihood of its being infected with bacilli, although such infection is not impossible if there be any sufferers from tuberculous disease amongst the workers. By far the larger quantity of tuberculous sputum finds its way—or, until the enforcement of recent precautionary rules, did find its way—into pocket handkerchiefs, diapers and cloths of all kinds. Sputum thus preserved soon becomes dry, and when the handkerchief or cloth containing it is shaken, minute particles of tuberculous sputum must be scattered broadcast. A special danger must therefore theoretically attach to those occupations which involve the handling, shaking, or tearing of old and dirty linen. Foremost among these must be placed the occupation of paper making. Anyone who has visited a paper factory and has passed through what is generally known as the "sorting-room" will appreciate what the danger (theoretically) must be. It is in these rooms that the large bales of linen rag are unpacked and are sorted into different classes by large numbers of pickers, mostly young girls or young women. The rags themselves are of the most varied description. Old handkerchiefs, old aprons, dusters, diapers, sheets, towels and every variety of wearing apparel may be recognised among them. Some are clean, but others are extremely dirty. In the process of picking and sorting, shaking, and tearing these rags an amount of dust is produced which in some rooms is so dense as to give the appearance of a mist around and above the heads of the pickers. The rooms as a rule are admirably lighted and ventilated, but on first entrance the cloud of fine dust is very decidedly irritating to the unaccustomed larynx. Under such conditions it would seem more than likely that some cases of tuberculous disease would arise amongst those who were required to inhale this dust for many hours in succession day after day, and who would most likely include in their number some who might be assumed to be predisposed to tuberculous disease by heredity or otherwise. Nearly all the workers, too, are of the period of life when such disease is apt to declare itself. In order to test the question I instituted a series of inquiries amongst some of the largest paper mills in England and Scotland, and by the courtesy of the respective boards of management and medical officers I am enabled to present the following results. In each case I asked the same series of questions, as follows:—

1. Does tuberculous disease of the lungs or other organs often occur amongst the young adults employed at the paper mill?

[1] THE LANCET, Jan. 6th, 1894.

2. Is there any reason to believe that the inhalation of the dust in the rag-sorting rooms may be a cause of such disease?

3. Are the rags—such as old pocket handkerchiefs &c.—cleansed, disinfected, or wetted before they are sorted?

4. Have any cases of inoculation of skin been observed, or any case of lupus presumably due to the handling of infected rags?

To each and all of these queries I obtained negative answers. As regards the disinfection of the rags, it was stated by some that the bales of rags were opened and sorted without any preliminary measures. At Messrs. Pirrie's, at Auchmill in Aberdeenshire, one of the directors kindly took the trouble to write to me on the subject and stated that "the rags are not disinfected or wetted by us; they are presumed to be disinfected at the place of despatch if they have been in any way in contact with disease. What we do on receipt of the bales is to split them open and throw the rags into a mechanical duster, where they are thoroughly shaken up and dusted before being placed in the hands of our sorters." Dr. J. E. Fowler, of Auchmill, who sent me the direct reply to my questions, stated in answer to Question 4 that "occasionally poisoned wounds of the finger happen, but only one case of lupus, and in that case the disease attacked the lip." From Mr. Wilkinson, of King's Norton in Worcestershire, whose special field of experience lay in the large works of Messrs. Baldwin, where paper of all kinds is manufactured and where the coarsest as well as the better kinds of rag are employed, I received negative replies to all four questions, with the following rider. "In a practice of twenty-two years at King's Norton I cannot call to mind a single case of tuberculous disease among the employés at Messrs. Baldwin's paper mills." In the extensive works of Messrs. Towgood, at Sawston in Cambridgeshire, nothing had occurred to suggest that the inhalation of the dust had ever been followed by tuberculous infection. From Bury in Lancashire, where are the mills of Messrs. James Wrigley and Son, Limited, the testimony of Mr. W. H. Barr was kindly supplied to me and bore out very fully the evidence afforded from other paper mills. Writing to the directors, he says: "During the twenty years I have been attached to the Dispensary and Infirmary, together with my observations as medical officer of health for a like period, I have perceived no connexion whatever between the diseases named and workers in not only your paper mill but many others; moreover, as certifying surgeon under the Factory Acts, I have failed to notice any special connexion between the said diseases and the handling of rags, &c., in paper mills. I may add that the daily opportunities I have of observing such a connexion, if it existed, could not have escaped detection."

From the specimen replies which I have quoted it will be gathered that my questions were not answered off-hand, but that the answers were sometimes made through the boards of management and sometimes referred to outside authority, from which it is fair to assume that they were deliberately and carefully drawn up. To the many gentlemen who have thus taken the trouble to aid in this inquiry I have already expressed my private acknowledgments, and I gladly seize this opportunity to repeat them publicly.

The evidence thus afforded is, of course, open to considerable criticism. It is not easy to prove that the rags in question are infective or that they contain any remnants of sputum, tuberculous or otherwise; but it is a somewhat striking fact that such prolonged exposure to inhalation of fine dust, whether tuberculised or not, should be so seldom associated with phthisis. The facts, however, go to support the view derived from the vital statistics of the consumption hospitals that presumably tuberculised dust is not a striking factor in the dissemination of tuberculous disease. That it is occasionally such a factor must be held as proven by the results of experimentation under Dr. Koch's own supervision. Hence such negative evidence as I have brought forward must not be regarded as in any way suggesting that the strict rule of disinfection of tuberculous sputum may be relaxed. Such a scourge as tuberculous disease of the lung must be met and stamped out at every point where we may reasonably cope with it; but at the same time it is not advisable to rest assured that its dissemination is only effected by the agency of bacillus-bearing dust, since clinical observation abundantly shows that, in those very places where dust is most likely to be tuberculised, tuberculous disease does not appear to be disseminated.

Upper Berkeley-street, W.

NOTES ON THE GUINEA WORM, FILARIA MEDINENSIS, OR DRACUNCULUS; WITH A NEW METHOD OF RADICAL CURE.

BY C. FORBES, M.D., C.M., D.P.H. CANTAB.

MUCH has been done to elaborate the description and elucidate the life-history of this parasite, the largest and most destructive entozoon infesting the human body; something has also been done towards suggesting a radical medical cure by Dr. J. A. B. Horton. The parasite appears to be endemic in certain parts of the northern tropical zone in Africa and Asia. It is also found in those who have resided or travelled much in the endemic areas, the climate of which is hot and damp, and the soil soft, clayey, and swampy, and affects those who have had much to do with the dark races. I will now give briefly the results of my researches and practice during the considerable periods I have resided and travelled in the tropics. It seems most prevalent during the rainy seasons and also most rapid and destructive in its progress on the west coast of Africa, where it grows to a larger size and reaches maturity quicker than elsewhere.

Description of worm, &c.—The mature female (the only species yet seen in the body) resembles a whitish elastic cord about ⅛ in. in diameter and varies in length from 6 in. to 6 ft. The number of parasites generally found in one body is one or two, but there may be as many as fifty. Its site, too, in about 80 per cent. of the cases is the lower extremity. In helminthology it is ranged under the sub-class nematelmia. Passing over its histology and anatomical structure, I will mention under four heads what I consider to be the stages of its development.

Stages of development.—1. On leaving the parent the ova gain the water or moist soil, and there take up their abode in small fresh-water crustaceans—for example, the species "cyclops" 2. From the body of this intermediary host it gets free as a minute filarian and passes its existence among the eighteen varieties of tank worms I have seen in Indian pools and African swamps. 3. Reaching a pupal or larval stage, it rests in the drying mud in stagnant pools, swamps, &c., whence it reaches the human intestines by means of water drunk. 4. Then, having gained the human body, there comes a period about which we know little, except that it finally reaches maturity, discharging first its young, then itself, through the cuticle of the body.

Etiology.—The cause of Guinea worm infesting the human body is the ingestion of foul water; but I must proceed diffidently, as my theory is opposed by such authorities as Busk and Carter. My reasons for the above statement are three in number—viz.: 1. The natives of endemic areas, being those mostly attacked by the parasite, are more filthy in their habits and more frequently make use of foul water for drinking purposes than whites. 2. In India, on the margins of fresh-water tanks, I have seen the pupæ of various tank worms. The inhabitants of surrounding neighbourhoods invariably bathe in and drink the water of these pools, and cases of Guinea worm are very numerous. 3. I have on the west coast of Africa seen my canoe men, both Kroomen and Fantees, drink foul water when heated with paddling and other work, and some time after many of them have come under my treatment for Guinea worm. Heredity has not been proved to have any effect as predisposing to attacks of the worm.

Symptoms and diagnosis—The parasite gives rise to no definite signs until, gaining maturity, it seeks an outlet through which to discharge itself; then there are pricking, itching, and lancinating pain in the part, and shortly afterwards a vesicle forms at the future point of exit. (At this period a diagnosis can be made, for the cord-like outline of the worm can be traced by palpation under the skin.) In three or four days the vesicle becomes turbid, then purulent, and bursts, disclosing to view an open, angry-looking ulcer, in the centre of which can be seen the whitish head of the worm, surrounded by ova and débris from its proligerous tube. Prognosis under the old-fashioned or native method of extraction (mentioned by the late Surgeon-Major Parke) is often bad when the worm breaks in being pulled out, as the tail recedes into deeper tissues and sets up destructive inflammation, leading often to necrosis of bones &c. Its pathology is that of its sequelæ and the lesions it

gives rise to in its migrations from one part to another. These I will enumerate only, as they are fully described in surgical text-books such as those of Erichsen and Holmes—viz., gangrene of toes, feet, and legs, talipes equinus, hydrocele, scrotal enlargement (elephantiasis), pyæmia, hectic fever, and septic peritonitis. It may prove fatal by producing hectic, pyæmia, exhaustion, peritonitis, or even tetanus.

Treatment: prophylactic, medical, and surgical.—1. Prophylactic: Water for drinking or cooking purposes should be obtained as pure as possible, then boiled for fifteen minutes at least, next filtered, and afterwards, as an additional precaution, thirst tabloids containing citric acid should be dissolved in it. Besides the above, one compound sulphur tabloid (Sir A. Garrod's formula) should be taken every third morning in case these or other parasites have gained entrance to the body, when the sulphur cuts short their life-history and development. 2. Medical: My method of radical cure is to impregnate the body with small doses of precipitated sulphur. This has proved eminently successful in my later cases (thirty-two in number), these being solely treated as follows—one compound sulphur tabloid (five grains), as above, to be taken by the patient every four hours daily for ten days, and then one tabloid twice a day during the next ten days, by which time the desired result is almost always obtained. When, as in these cases, I was able to keep the patients under observation for about three weeks the result was invariably good. 3. Surgical: My object in treatment is to do away with the necessity for any surgical interference. If the knife is to be used the measures must be promptly conceived and as quickly carried out; otherwise the worm will escape by migration. Chloroform being administered, if available, the point of a sharp bistoury should be entered through the skin at or above the vesicle which has formed; the bistoury should be carried rapidly round in the direction of the worm's body, with the edge outwards, in a sweeping manner, and the worm brought out through the incision. The operation wound, being dressed with dermatol powder, which is drying as well as antiseptic, or, if this cannot be obtained, with iodoform (crystals), and closed with antiseptic precautions, generally heals rapidly.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

SPINA BIFIDA; ULCERATION AND RUPTURE OF SAC; SPONTANEOUS CURE.

BY R. KNOX, M.B. EDIN., M.R.C.S. ENG.

THE following case may prove interesting on account of its rarity. On Oct. 18th an infant aged one week came under my care. Its development was good. There was a large swelling in the lower part of the spine, but no other abnormality. The movements of the lower extremities were good. It had slight difficulty in micturition for the first few days after birth. On inspection the tumour was found to be situated in the lumbo-sacral region; it was about the size of a small orange, translucent, fluctuating, tense, and covered by a thin bluish-white membrane, which at parts was reddened and inflamed. The tumour was sessile, umbilicated at the centre, and had a faintly marked longitudinal furrow; it could be partly emptied by pressure, but on account of its extreme thinness it was not thought advisable to handle it much. A notch in the spinal column could be indistinctly made out. At one part the tumour was deeply congested and inflamed, and evidence of commencing ulceration was present. Nothing was done beyond warning the parents to keep the part carefully protected and dry. The ulcerated spot continued to increase, and in a few days perforation occurred, followed by escape of pus and cerebro-spinal fluid; the latter escaped in large quantity and continued to trickle from the wound, the flow increasing when the child cried. The swelling collapsed partially after the rupture. The wound continued to discharge pus and cerebro-spinal fluid. The escape of the latter was prevented by covering the wound with layers of collodion and cotton-wool. After the rupture the general condition of the infant changed; it became very irritable, cried a great deal, and after a time became drowsy. No convulsions were observed at any time. The tumour partially refilled. In two days the dressing was removed and the condition of the tumour examined. Pus and cerebro-spinal fluid continued to escape, though in much smaller quantities. On applying pressure more cerebro-spinal fluid could be squeezed out of the swelling; the sac walls appeared to be thickened and inflamed, and when palpated were found to be indurated, indicating that inflammatory action was going on. The part was carefully washed with antiseptic lotion, and the dressing of wool and collodion was reapplied. Firm pressure was secured by means of several layers of strong plaster strapping and a firm bandage. The tumour was again examined in four or five days and was found to have diminished in size; it was thickened all over and did not fluctuate, and no cerebro-spinal fluid escaped when firm pressure was applied. Pus continued to discharge from a small ulcer. The skin around the base of the swelling had developed the character of ordinary skin. The ulcer was dressed with simple ointment, and in a few days had healed. On further examination on Dec. 20th the infant was found to have grown considerably, and the power of the lower extremities was good. The site of the spina bifida was occupied by thickened integument freely movable over the parts beneath except at the centre, where it appeared to be adherent. The skin was of normal colour all over, except at the upper part, where it was bluish. There was no fluctuation and no distinct notch could be detected. The central point was slightly umbilicated, and to the right there was a cicatrix indicating the seat of the rupture.

Remarks.—The ulceration of part of the sac led to a general inflammation of the sac wall; the surfaces of the sac came into contact and were united by adhesive inflammatory changes. The cleft in the vertebræ was closed by the inflammatory change, and the further escape of the cerebro-spinal fluid was prevented. The remarkable point about the case is the entire absence of evidence of any inflammatory changes in the membranes of the cord. Septic meningitis is the almost invariable sequel of a ruptured spina bifida, yet no symptoms occurred to indicate that such had followed the rupture.

Hafod, near Pontypridd.

A CASE OF ACUTE PEMPHIGUS.

BY H. W. WEBBER, M.D., B.S. LOND.

SEVERAL interesting cases of acute pemphigus have lately been recorded, notably a series by Dr. Payne[1] last year, and one case under the care of Dr. Penrose.[2] The present case seems noteworthy on account of the severity of the constitutional symptoms in combination with a rather ill-developed skin eruption of inflammatory character. This is not unusual in some of the exanthemata and may suggest the possibility of an alliance in nature with these diseases.

A man thirty-four years of age was seen first on Nov. 4th, 1892, complaining of a skin eruption on the legs and thighs. He had noticed it for a fortnight. It began with a "boil" on the left leg, which was followed at intervals by others on the other leg and both thighs. On examination the eruption was found to consist of about a dozen blebs varying in size from a split pea to that of a sixpenny piece and a rather larger number of scabbed and crusted areas marking the position of previous blebs. The contents of those still remaining unbroken were more or less seropurulent, and the distribution of the eruption as a whole was more on the flexor than the extensor surfaces. The bases of nearly all the lesions were inflamed, and round one scabbed area on the extensor surface of the left leg there was a wide margin of redness, with œdema and tenderness extending downwards over the front of the leg. The tongue was coated, the pulse 90, and the temperature 99° F.; the bowels had been confined for two days. The patient was ordered a mixture containing citrate of potassium and compound tincture of cinchona every four hours, hot boracic fomentations were applied to the inflamed areas, and an aperient was ordered. On Nov. 5th, in addition to the previous lesions, which continued in much the same condition, a tense bleb about the size of a walnut, containing clear serum, appeared about the middle of the flexor surface of the left leg, and one rather

[1] THE LANCET, Aug. 16th, 1893. [2] THE LANCET, Feb. 3rd, 1894.

smaller bleb on the right gluteal region. On the next day the contents of both were becoming purulent, and their bases inflamed. On Nov. 7th the inflammation around the large bleb on the left leg was increasing rapidly, with œdema extending for a distance of two or three inches around it. No fresh eruption now appeared. On the following day the patient was ordered tincture of perchloride of iron in ten-minim doses every four hours; the eruption seemed to be healing a little, with less inflammation. The patient's condition gradually improved till Nov. 14th, although very little healing took place in the skin eruption, the bases of most of the lesions being inflamed, and œdema was present over both tibiæ, especially the left. In the morning the patient had an attack of vomiting, with severe vertical headache. The temperature still kept at from 98° to 99°. On examining the urine it was found to contain albumen, and under the microscope blood corpuscles and some epithelial casts were seen. The headache, with sickness two or three times a day, continued, and on the morning of Nov. 17th the patient was found to be delirious at times, complaining much, when conscious, of pain in the head. Both legs were markedly œdematous, and the skin of the face seemed a little puffy. No signs of fluid in the peritoneal or pleuritic cavities could be detected. The skin eruption remained in much the same condition. The urine contained blood corpuscles and blood casts. The temperature was found to be 104·2° and the pulse 90. Three grains of sulphate of quinine were given every four hours, and an ice-bag was applied to the head. At 9.30 P.M. the temperature was 105°, the pulse 90, and the optic discs were blurred. The patient was sponged with tepid water, which reduced the temperature to 103·2°. On Nov. 18th the morning temperature was 105° and the evening temperature 104·2°, both being reduced temporarily by tepid sponging. The pulse was 120 and the respiration 30; inspiratory crepitations were audible over the base of the left lung. The bowels were opened four times in the morning, the motions being loose, yellowish, and flocculent. The urine contained blood corpuscles and casts. On the following day the morning temperature was 104·2° and the evening temperature 102·2° (after sponging); the pulse was 120. Inspiratory moist sounds could be heard over both apices; both legs were œdematous. On the 20th the temperature was 103·2°, the respiration 36, and the pulse 120. The patient was very delirious and was kept in bed with difficulty. On the 21st the patient was still very delirious and restless. The temperature was 102·4°, the respiration 40, and the pulse 120. He lingered till the next day, when he sank gradually. No post-mortem examination was obtained.

Church-road, Rickmansworth.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

UNIVERSITY COLLEGE HOSPITAL.

CÆCAL INTUSSUSCEPTION IN AN INFANT AGED SEVEN MONTHS; REDUCTION AFTER LAPAROTOMY; RECOVERY; REMARKS.

(Under the care of Mr. BILTON POLLARD.)

THERE are some surgical conditions which a few years ago were regarded as being incurable and invariably fatal, whilst now scarcely a day passes without examples of a record of their successful treatment. Intussusception is hardly in this category, for its treatment is still unsatisfactory; yet the results are more encouraging than they were, a position we think due either to the earlier resort to abdominal section on the failure of other methods, or, in special cases, to the resort to abdominal section without the trial of other methods. As Mr. Bilton Pollard remarks, it is important that cases should be reported in order that the profession may have more certain grounds to go upon in treating this dangerous condition. We have for some years advocated a more frequent resort to abdominal section at an early stage of the disease, and we still continue to do so.[1] In the early stages, if the operation be performed immediately on failure of injection of air or fluid to effect relief, the intestines may be found on exposure to be free from adhesion and the reduction may be effected rapidly and through a small incision. Cases of recovery after abdominal section for intussusception at the age of seven months are rare. Dr. Kammerer[2] and Mr. Howard Marsh[3] have, however, recorded successes at the age of six months. Few diseases require more prompt surgical treatment than intussusception if life is to be saved.

A female child aged seven months was admitted to University College Hospital on Dec. 14th, 1893. She had recently suffered from constipation, for which aperients had been given. On the day before admission, between 4 and 5 P.M., the child appeared to be suffering severe pain; she screamed, clenched her hands, and became "black in the face"; she also "strained and heaved." Soon after this, on changing the diaper, the child's mother noticed that blood and "slime" were being passed from the bowel. A medical man prescribed something for diarrhœa, and on seeing the child again about noon on the following day sent her to the hospital. No vomiting occurred in the interval between admission and operation. The discharges from the rectum had a distinctly ammoniacal and "fishy" smell. The intussusception could be felt extending from the left costal margin to the pelvic brim, and by rectal examination the end of it could be felt a little below the latter level. Preparations were being made for attempting reduction by the pressure of water run into the bowel from an irrigator, when Mr. Barker remarked that he considered the smell of the rectal discharges to be suggestive of gangrene of the gut and that he had previously observed it in gangrenous intussusceptions. Mr. Pollard thereupon determined to perform laparotomy at once. The operation of median laparotomy was begun at 2.30 P.M. (twenty-two hours after the onset of symptoms). The intussusception was drawn into the wound. The gut looked healthy. As much as possible was reduced by pushing up the intussusceptum, as originally advocated by Mr. Hutchinson. After as much as possible had been reduced outside the wound the intussusception was returned into the abdomen, and the invaginated gut was pressed along the course of the transverse and ascending colon into the right loin. As no further reduction could be effected by intra-abdominal manipulations the intussusception was again, though with some difficulty, brought through the wound. The reduction of the remainder of the intussusception required pressure, and, indeed, as much as it seemed safe to use. After the reduction of the ileo-cæcal valve the cæcum itself still remained invaginated. The last point to be reduced was on the right side of the extremity of the cæcum, where the bowel was dark-coloured and coated with a small patch of lymph. It was, however, thought safe to return it into the abdomen. The laparotomy wound was stitched up and dressed antiseptically. Half a minim of tincture of opium was ordered to be given every four hours. This dose was continued for five days, and then it was gradually diminished and finally omitted on the twelfth day. Three drachms of a mixture, in equal quantities, of milk and barley water were at first given every hour. The quantity was gradually increased until, on the seventh day, an ounce of milk and half an ounce of barley water were given every two hours. The bowels acted naturally on the day after the operation. The child was restless and febrile, owing apparently to teething, for a few days. The wound healed by first intention, and the child was sent home on the seventeenth day after the operation.

Remarks by Mr. BILTON POLLARD.—This was a case of cæcal intussusception. The cæcum had first of all been invaginated into the ascending colon, and then the ileo-cæcal valve and the ascending colon followed. Recovery does not generally follow the reduction of an intussusception after laparotomy in a child as young as this one. I believe the mortality of laparotomy is largely due to the delay which is caused through the trial of other methods of reduction. If water pressure succeeds it is, of course, a most simple and perfect method of treatment. If, on the other hand, it fails, the operation itself probably adds to the shock of the disease itself, and the delay which is necessary in order to test the effect of the water pressure certainly increases the gravity

[1] THE LANCET, Jan. 26th, 1889; Nov. 29th, 1890; and May 23rd and June 13th, 1891.
[2] Med. Record, New York, 1890; p. 114. [3] In 1875.

of the case In this case, as there was a suspicion of gangrene having occurred, I proceeded at once to laparotomy, and I am glad I did so, for, considering the force which was needed to reduce the last part of the intussusception, it is quite unlikely that the pressure of a column of water from three to four feet would have done so, and the delay which the attempt would have occasioned, if it had not made reduction impossible, might at least have interfered with the successful result of the case. It is important that all cases of intussusception reduced by one method or the other should be reported in order that more certain grounds may be obtained for deciding upon the best method of treatment.

BEDFORD GENERAL INFIRMARY.

PENETRATING WOUND OF THE HEART; DEATH IN THIRTY-NINE HOURS.

(Under the care of Mr. F. A. FIELD.)

THE study of wounds of the pericardium and heart is always of interest, and the following contribution to our knowledge of cases in which a foreign body has lodged in the heart itself and produced death is not of less interest than the few others of a similar character that have already been recorded in THE LANCET or that can be found scattered through the pages of professional literature. Fischer collected a series of forty-seven examples of these wounds, in which the foreign body lodged in the heart or pericardium. Of these, seventeen were caused by needles, one by a pin, one by an iron pin, one by a thorn, one by an ivory toothpick, one by an iron stylet, one by a file, two by bones, one by a wooden peg, one by the point of a dagger, twelve by bullets, one by shot, one by a piece of a gun, &c. In two cases the needle was extracted and the patient recovered; but in one of these the evidence of penetration of the heart is not satisfactory. Once a needle two inches long was found encapsuled in the substance of the ventricle, and once a needle was found covered with lymph after six years' lodgment. The majority of cases proved fatal, but occasionally life may be prolonged; in one of Fischer's cases death ensued nine months after injury, cardiac symptoms having supervened only during the last twenty-two days of life. In one instance death was due to laceration of the cardiac wall and coronary vessels by friction against the point of the needle. In more recent times other cases of similar injury have been recorded: for instance, Dr. Wyman cut down on a foreign body which could be felt under the skin in the cardiac region of a child eight months old and extracted a needle; the child recovered. We have recorded in THE LANCET a fatal case of penetrating wound by a needle, with hæmorrhage into the pericardium, the patient being a lunatic. Those interested in the subject will read with advantage the communication on "Survival after Gunshot Wounds and other Injuries of the Heart" from Surgeon-Major Curran which was published in THE LANCET,[1] and the letter from Dr. O'Connell [2] which followed it For the notes of this case we are indebted to Mr. F. A. Field, resident surgeon at the infirmary.

A girl aged three years and two months was admitted into the Bedford General Infirmary on Dec. 20th, 1893, suffering from a punctured wound of the heart. On the afternoon of the same day the patient was seated on a hearth-rug, fully dressed, and playing at sewing with her three sisters, who were all small children. No one else was present at the time of the accident, and the exact manner in which the wound was received is not known. Just before 1 P M the mother's attention was attracted by screaming, and on running into the room she found the child showing signs of pain in the chest. She undressed her and found on the front of the chest a small prick, which was bleeding slightly; hanging from the wound was a very short piece of thread. The needle was invisible, but its head could be felt through the skin, projecting vertically about half an inch to the side of the wound. On pulling the thread the head of the needle moved, but the child screamed as if in pain; so she desisted, and started to bring it to the infirmary, a distance of only half a mile. Meeting her husband on the way, she handed the child to him. On admission the child was attended to at once. She was evidently not in severe pain and only cried on being examined. A puncture was present in the third left intercostal space close to the margin of the sternum, and from it blood was oozing. On a careful examination no trace of the needle or thread was found, and no abnormal sound was heard on auscultation. The wound was closed with collodion and cotton-wool. From the imperfect history obtainable and the absence of important symptoms it was considered probable that the child had been merely pricked and that the needle had fallen out. A few minutes later the mother arrived and was so clear in her evidence that it was at once decided to make a slight exploration in the hope that the head of the needle might be still embedded in the intercostal muscles. The child was now lying quite still and apparently comfortable. Chloroform was given shortly before 2 P.M.—i.e., less than an hour after the accident—and an incision about an inch long was made through the skin in the third left intercostal space. The needle could not, however, be felt in the intercostal muscles, and it was not considered advisable to go any deeper. The wound was closed by a single suture. The chloroform was well taken and was not accompanied or followed by any sickness or other trouble. The patient was very comfortable, quiet, and sleepy all the afternoon and evening. She took a cup of milk at 4.30 P M. and another at 7 P.M. The temperature at 6 P.M. was 98° F. She began to cry about 10 P.M., and was then very restless for about three hours. She vomited once at 4 A M. on Dec. 21st. After this she was given milk and soda water, taking a pint of milk and half a pint of soda water in the course of the night. She slept well during the latter part of the night and was evidently easier again. At 8 A.M. the temperature was 98·2°. During the whole of the morning she was fairly comfortable, lying quietly on her back. The heart sounds were muffled; no pericardial friction was heard. The chest was not thoroughly examined, as it was considered more important to keep the patient at rest. During the morning she took two cups of milk, and at 12 30 P.M. a little tapioca pudding and another cup of milk for dinner. From the favourable condition of the patient it now seemed likely that the needle had avoided wounding the heart or great vessels. At 1 30 P.M.—i.e., twenty-four hours and a half after the injury—the patient almost suddenly became very much worse, pale, collapsed, and quiet, and in fact presented most of the symptoms present in patients dying of internal hæmorrhage. She rallied slightly and became very restless, remaining pale, uneasy, and very weak till her death. At 3 30 P.M. the temperature had risen to 101°. At 8 P.M. it was 100°. The respiration was now becoming more and more rapid and shallow. At 11 P.M. the respiration was 132 to the minute. The patient was weaker and in pain, with evidence of nausea, and the case was seen to be hopeless. Two minims of tincture of opium were now given with a little carminative medicine, but only procured her a few minutes' sleep. She had no other sleep during the night. She vomited twice between 1 A.M. and 2 A.M. The temperature at 2 A M. was 102·6°. She died at 3.50 A.M — i.e., thirty-nine hours after the accident and fourteen hours and twenty minutes after the onset of severe symptoms.

Post-mortem examination eleven hours after death.—On opening the chest in the usual manner a small quantity of blood was found just inside the chest-wall, beneath the puncture in the third left intercostal space, and the tissues of the anterior mediastinum were bloodstained from that spot down to the anterior attachment of the diaphragm, where there was a small but definite clot. There was no apparent wound of the internal mammary artery. The pericardium was distended with bloodstained fluid containing a few loose shreds of lymph, but no clots. The heart was transfixed from before backwards by an ordinary unbroken sewing-needle. The head of the needle was just out of sight beneath the visceral layer of the pericardium, midway between the auriculo-ventricular groove and the apex, and nearly half an inch to the right of the anterior inter-ventricular groove. It thence passed through the ventricular wall into the cavity of the right ventricle, where it transfixed the base of the anterior papillary muscle and entered the right side of the ventricular septum midway between its anterior and posterior margins; it thence continued in the substance of the septum, just missing the cavity of the left ventricle, and emerged an eighth of an inch to the left of the posterior inter-ventricular groove, midway between the auriculo-ventricular groove and the apex. The point projected for nearly half an inch beyond the heart. The needle was just over one and a half inches long and is accounted for as follows: in the right ventricular wall, one-tenth of an inch; in the cavity of the right ventricle, one-third of an inch; in the septum, two-

[1] THE LANCET, April 2nd and 9th, 1887.
[2] THE LANCET, July 16th, 1887.

thirds of an inch; in the pericardium, nearly half an inch. For a quarter of an inch on each side of the point of emergence of the needle the surface of the heart was inflamed and nodulated, and for a somewhat larger area there was effusion of plastic lymph. On the rest of the heart, including the point of entrance of the needle, there were no such inflammatory products; and there was no evidence of the place where the needle originally entered the pericardium. There was no clot or deposit around the needle in the right ventricle. Over the diaphragm, opposite the point of the needle, there was a round area, half an inch in diameter, from which the pericardial surface had been completely teased away; the muscular substance of the diaphragm was here much lacerated, and in the centre there was a slight perforation through the peritoneal surface into the abdominal cavity. On and around this portion of the pericardium there was plastic lymph.

Remarks by Mr. FIELD.—The almost complete absence of definite signs and symptoms in the early stages of this case makes it of especial interest from the point of view of the diagnosis of cardiac lesions and renders it important to elucidate the probable pathological history. As the cause of the accident I would suggest that the needle probably became fixed vertically in the child's dress and that she fell forward with violence against some hard body, thus driving it through the chest-wall into the heart. The beating of the heart would then tend to make the needle move in the direction of its point. The hæmorrhage in the mediastinum was almost certainly due to a punctured wound of the left internal mammary artery, which afterwards closed and became imperceptible. If it had been due to blood passing along the needle from the heart there would have been much more blood in the pericardial cavity. The inflammatory changes around and opposite to the point of the needle were so advanced that the latter must have projected from the heart long before the onset of severe symptoms (fourteen hours and twenty minutes before death); connecting this fact with the complete absence of inflammation at the point of passage through the pericardium and at the point of entrance into the heart, the natural conclusion seems to be that the heart became completely transfixed very soon after the accident, the head of the needle soon becoming buried, and the point projecting behind the heart. The collapse was probably due to the increasing pericardial effusion and inflammation. The increasingly rapid and shallow respiration would be due to the same cause, perhaps accelerated by the teasing of the diaphragm.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Administration of Anæsthetics Clinically Considered.

AN ordinary meeting of this society was held on Feb. 19th, Dr. FREDERICK ROBERTS, Vice-President, being in the chair.

A paper was read by Mr. JOSEPH WHITE of Nottingham on the Administration of Anæsthetics Clinically Considered. He said that about forty years ago he laid before the Nottingham Medico-Chirurgical Society an analysis of several hundred cases of administration of anæsthetics, and his paper was published at the time.[1] He had kept no exact record of his earlier cases, but he had notes more or less complete of 7055 cases. Of these, 4049 were administrations of chloroform, 798 administrations of ether, 691 of nitrous oxide, 79 of methylene bichloride, 5 of amylene, and 1433 of A.C.E. mixture, which latter he had almost entirely used for many years. He left Edinburgh in the early part of 1847, when chloroform was beginning to be used. The smell and exciting effects of ether were causing dissatisfaction, and chloroform was then lauded as superior for the following reasons: a smaller quantity produced a more marked effect; the narcotic effects were more rapidly induced, more complete, and lasted for a longer period; the inhalation was more agreeable, produced less pulmonary irritation, and required no special apparatus; and it was more portable, cheaper, and then believed to be safer than ether. The first instances of its administration in London were then mentioned, and the earlier records of death under chloroform were referred to. In all the earlier cases death took place without any warning, the operation being of a trifling nature, and the patient in a sitting posture. The effects produced by chloroform inhalation might for practical purposes be divided into four stages: the first a period of continued consciousness, the second a period of semi-consciousness, the third a period of sleep, and the fourth one of coma and threatened death. In the first stage the pulse was quick and feeble, the face flushed, and the breathing hurried for a few minutes and then slow. In most of the early cases of recorded death from chloroform the patients died in this stage. Snow showed that nine out of fifty died within a minute, and four of these died in a few seconds. He thought that the element of fear came in strongly here, and that patients sometimes approached an operation almost fainting from fright. In the second stage the patient was noisy, talkative, incoherent, and excited, and often struggled violently and then fell back exhausted. In this stage sickness frequently occurred, there being great prostration, a clammy pulse, and profuse perspiration. In the third stage the breathing was regular, the patient tranquil, and the pulse normal; the patient was unconscious, but readily roused; the eyeball rolled from side to side, the pupil oscillated and then became contracted; the eyeball then became motionless, the reflex was abolished, and sleep occurred. By watching the pulse, respiration, and pupil this condition could be maintained with little danger, and this was the stage when operations should be performed. In the fourth period, that of coma and threatened death, the pupil gradually dilated, the eyeball remained fixed and insensible to touch, and the breathing became stertorous, irregular and diaphragmatic; the heart's action was slow, laborious, and feeble; the muscles were relaxed, a cold perspiration broke out, and death occurred as in apoplexy. Experiments by Simpson and others showed that in rapid death the heart failed first, while in the slower cases the respiration was the first to stop. Mr. White then referred to the conclusions of the committee of the Royal Medical and Chirurgical Society in 1864, when they recommended the administration of ether, or of a mixture of chloroform and ether, and an immediate resort to artificial respiration if dangerous symptoms supervened. The conclusions of the Glasgow Committee were also reviewed. They came to the conclusion that ether might be given indefinitely without interfering with the heart, and that chloroform had a capricious effect occasionally on the heart's action. They recommended not only closely watching the effect on the respiration, but also the effect on the pulse at the time of administration and for some time after. They agreed that artificial respiration was the most effectual means of restoration. The Hyderabad Commission found that the administration of chloroform was free from risk, provided that the breathing was regular and the vapour was stopped when the patient was freely under its influence; that it never caused death by sudden stoppage of the heart; that death was always the result of an overdose; that the overdose was due to holding the breath, struggling, or anything which caused gasping; and that the inhibitory action of the vagus which was called into play in threatened or actual poisoning with chloroform was an important safeguard against a fatal result. Mr. White differed from the Commission, who said that the only point of importance was to watch the respiration, for he held that the pulse was an equally valuable indication, and he watched both jealously. He quoted an instance where untoward symptoms were due to a too rapid administration of the vapour. He summarised his conclusions as follows. As a preliminary step the patient should be encouraged as to the prospects of the operation, in order as much as possible to remove fear. Three or four hours previously only a few spoonfuls of liquid nourishment should be given, but no solid food. The patient should be placed in a horizontal posture, pressure being removed from the neck, and tight clothing loosened. The undivided attention of the anæsthetist should be given to the patient, and there should be no noise in the room. The anæsthetic should be administered gradually and the quantity given gradually increased. If struggling occurred the inhaler should be removed and air admitted, an endeavour being made to maintain regular breathing. The pupil, which was at first commonly in a state of moderate dilatation, should be carefully watched till the conjunctiva was insensible, till the pupil oscillated between dilatation and contraction, and till the eyeball slowly rolled in the orbit and then became fixed. The operation should never be commenced till the stage of sleep was

[1] Brit. Med. Jour., June, 1857.

reached, as before that it roused the patient and rendered him dreamy. If the eyeball became fixed and the breathing stertorous the administration should be stopped; the patient should not be suddenly roused, but fresh air and ammonia should be used as restoratives. If the pulse or respiration failed, an immediate recourse should be had to artificial respiration. He believed that there was considerable advantage in the use of a mixture over chloroform alone. He used the A.C.E. mixture almost exclusively and found it to be less depressing and irritating and freer from dangers than chloroform alone.

Dr. SANSOM said that the subject had been of great interest to him, for he believed that between 1859 and 1868 he had administered more chloroform than anybody else in this country, and in the latter year he embodied the general teaching of that time in a book. In spite of all that had been written and said, the general opinion seemed to be that chloroform might be given recklessly. He held that it was an exceedingly dangerous drug and must be administered with the greatest possible care and caution, although Syme and others had given large quantities and had held that this was the keynote to safety and not to danger. He regretted that this teaching had been most perniciously enforced by the report of the Hyderabad Commission. He was sure that it was most unwise to conclude that because an animal died in a particular way a man so died also; he felt sure that most human beings under chloroform who died did so of syncope. The heart failed through its nerves and not through its muscle, and fatty degeneration of the heart was not a common cause of death at any time, under any circumstances, for of 860 cases of sudden death investigated at Vienna only six had fatty degeneration of the heart. If chloroform was given on an ordinary inhaler or towel, one had not the slightest idea of the amount of chloroform being used; as much as 30 per cent. could be given in this way, whereas 1 per cent. would produce and maintain chloroform anæsthesia. The A.C.E. mixture was valuable, but the volatilising power of each of its constituents was different. He believed in the use of equal bulks of absolute alcohol and chloroform, for the alcohol restrained the volatility of the chloroform, and the strength of the vapour was reduced by at least half.

Dr. DREWITT thought that Mr. White worked with a degree of anæsthesia lighter than that found convenient for most operations. The minutely contracted pupil pointed to a depth of anæsthesia not sufficient for operation upon particularly sensitive parts. A pupil of about two and a half millimetres in diameter was about the size of an ordinary chloroform pupil in deep anæsthesia, when the patient was passing from the third to the fourth stage. The A.C.E. mixture was useful in elderly people, and after-effects were either entirely absent or very rare. The objection as to its volatilisation was rendered inert because it was administered in small quantities frequently repeated. Very vigorous men were the worst subjects for chloroform, because they had a muscular system likely to interfere with respiration, a condition of spasm not represented in anæmic and fragile persons. A softly snoring stertor was the best kind of respiration under chloroform and was more advisable than light anæsthesia. If the act of deglutition was performed, it showed that the patient was not sufficiently under the influence of the anæsthetic. He believed that the teachings of the Hyderabad Commission tended to lead people astray, for the researches of Drs. Gaskell and Shore had shown that the fall of blood-pressure was more due to weakening of the heart than to vaso-motor paralysis, and this explanation fitted better with clinical experience.

Dr. SILK thought that all would agree that chloroform was a terribly powerful, if not a dangerous drug, and safety depended more upon care in administration than in the drug itself. Fear undoubtedly was an element of danger in the first stage, but if fear entered much into the account deaths should have been more numerous in the earlier days than now. He thought that no one had yet succeeded in successfully explaining the cause of the sudden deaths in the first stage. In the second stage the heart was in the condition that Professor McWilliam had called "delirium cordis," the muscle of the heart being in a state of turmoil and prone to sudden dilatation. If sickness occurred in this stage it should be cut short by keeping to the anæsthesia, and thus the further depression after the act of vomiting would be avoided. The actual state of the pupil did not become settled till some time after the administration had been going on, and a very small pupil was a sign of light anæsthesia. He highly valued a proper preparation of the patient beforehand, and for resuscitation inversion was valuable, especially in children.

Mr. ROWELL held that the fixing of the eyeball was a more useful guide than the smallest dimension of the pupil, for when the latter condition existed the patient was not sufficiently under chloroform for many surgical procedures. The completion of vomiting acted as a stimulant to the heart and improved the patient's colour, pupil, and respiration. The best method of stimulating the chloroform heart was by pressing upon it. Pickering had made some experiments upon the action of chloroform on the heart, and he found that when he eliminated the nervous factor the effect on the cardiac muscle was the same.

Dr. BENHAM believed that the giving of alcohol before the administration of chloroform avoided one of its chief dangers: this was in some institutions carried out as a routine plan, and in fatal cases it ought to be mentioned whether it had been done or not.

Sir WILLIAM DALBY said that two sections of society were still interested in the much-debated question of the best anæsthetic, and those were the surgeons and the persons to whom the drug was being administered. A large number of surgeons never permitted chloroform to be given to any of their patients, and there were others who only allowed it to be given for certain operations. Other skilled anæsthetists preferred to give ether first and follow with chloroform afterwards. There was certainly a remarkable difference between the mortality from chloroform and ether, and if chloroform were still used the precise reasons for its preference should be mentioned.

Mr. DAVIS said that most anæsthetists now gave ether rather than chloroform. Nitrous oxide gas and ether were good to begin with even if chloroform were continued, and this was especially so in the young adult.

Dr. EDMUNDS said that the ordinary inhaler did not register the amount of chloroform consumed, and he advocated the use of the modified Junker's apparatus. The fatality depended upon the speed with which the drug was pushed into the system: about 3½ per cent. of chloroform in the vapour was sufficient.

Mr. WHITE, in reply, agreed in the necessity of regulating the quantity of chloroform in the vapour, a fact which had been insisted on by Mr. Clover. By the ordinary method of administration a great deal of the drug was of necessity lost, and hence, he said, we contented ourselves with estimating the amount present in the system by the physiological results it produced. He had had no fatal cases. Strong men accustomed to alcohol were sure to struggle, and more so than weak men, women, or children.

PATHOLOGICAL SOCIETY OF LONDON.

Syphilitic Sclerosis of Skull. — Specimens illustrating the Pathology of Rodent Ulcer, with and without Ulceration.

AN ordinary meeting of this society was held on Feb. 20th, Dr. PAVY, President, being in the chair.

Dr. ELWIN HARRIS showed a specimen of Syphilitic Sclerosis of the Skull of a man thirty-three years of age. There was a history of insanity in his family, but he denied having had syphilis. The first symptom was tremor of the right arm fifteen years before death; since then he had had tremors of both hands and forearms, and slightly of the legs and head, ceasing when at rest. The speech was slow and indistinct, loss of vision was almost complete, due to atrophy of both discs, and there was nystagmus of both eyes. Sensation was good. In 1888 he suffered from fever, accompanied by severe pain in the back of the neck and the head. Later, signs of thickening of the bone developed, and trephining was performed. At the necropsy the frontal bone was found to present a peculiar massive appearance, due to extensive and fairly uniform thickening of the bone. This overgrowth of bone commenced almost at the junction of the coronal and sagittal sutures and involved the whole of that part of the frontal bone enclosed by two lines drawn obliquely from this point to the most anterior point of the temporal ridge on the left side and to about half an inch behind this on the right. The growth was almost symmetrical; on its outer surface the bone presented a rough and uneven appearance, but from its uniform distribution it altered little the contour of the head. On the inner surface the same uniform distribution was noticeable, and the general

configuration was little altered. There was a roughness of this surface which corresponded in its extent almost to a line with that on the outer surface, and over this area the dura mater was firmly adherent. The thickest part of the bone was in the middle line, at the junction of the lower and middle thirds, being one inch in thickness. A cut section showed the bone to be as dense and close as ivory, there being no appearance of diploë and no differentiation between the tables of the skull. A section at the junction of the thickened and healthy bone showed that the increased thickness was chiefly due to deposits of new bone on the outer table, whilst there was some, but comparatively little, thickening on the inner surface. The rest of the calvaria showed no thickening in any part. On removing the brain from the skull the dura mater was found to be firmly attached to the rough surface of the bone and to the brain. On section of the brain a tumour was found to be occupying almost the whole of the frontal lobes and to be continuous across the commissure. The tumour in most parts appeared to be encapsuled, but in others it infiltrated the tissue around. The brain substance in the whole depth of the frontal lobes was destroyed by the growth, and the latter was stretched, flattened, and infiltrated with grey matter on both the superior and inferior surfaces. It had compressed the anterior cornua of the lateral ventricles, but had not extended into them. On section after hardening in Müller's fluid the tumour, on the whole, was found to be homogeneous and about the consistence of the rest of the brain; in parts there were yellowish areas, apparently of caseation, and here and there slight grittiness could be detected with the finger. The rest of the brain was normal. Mr. Bowlby reported that the tumour showed no remains of brain tissue. In some parts there was a growth of granulation-like tissue, consisting of cells and vessels in a matrix of loose fibrillar tissue. In other parts the section was chiefly composed of concentric rings of dense fibrous tissue, and these on further examination proved to be bloodvessels with an extraordinary thickening of their walls. In most of these vessels the lumen was obliterated, and all trace of the normal arterial wall was lost. In a few places there were masses of degenerated caseous material, and scattered through the section there were some amorphous masses with calcareous particles which were apparently "brain sand." A section of the frontal bone showed that it consisted of very dense osseous tissue, with no trace of cancellous material and no tumour growth in the bone. Taking into consideration the appearances presented by the bone and the naked-eye and microscopical appearances of the tumour, the case appeared to be one of an inflammatory nature. The extent of bony thickening, the great increase of thickness of the vessel walls, and the degeneration observed in some of the cell masses pointed to the gummatous origin of the growth. The size of the tumour and the absence of other syphilitic lesions in the brain were undoubtedly unusual in cases of gumma of the cerebrum; nevertheless the absence of any of the ordinary appearances of tubercle, or of other specific inflammatory lesions seemed to warrant the opinion that the whole of the morbid conditions described were due to syphilis.—Mr. EVE had seen thickening nearly as great as that shown in connexion with mastoid disease, associated with extra-dural abscess which had discharged through the mastoid vein.—Dr. H. TOOTH asked what was the state of the dura mater; it would be extraordinary if there was no alteration in it, unless the association of the cerebral condition with the cranial thickening was merely fortuitous. The condition of the bone resembled that seen in children in cases of congenital syphilis.—Mr. SPENCER thought that both conditions were due to syphilis, but were independent of each other.—Dr. HARRIS, in reply, was unable to testify as to the condition of the dura mater opposite to the bony thickening; elsewhere it was slightly thickened.

Mr. PAUL (Liverpool) communicated a paper on Rodent Ulcer, in which he discussed the pathology of this affection under the following headings: (1) the respective mode of commencement of epithelioma and rodent ulcer; (2) the normal structures missing within the area of tissue first attacked by rodent ulcer; (3) the structures involved in the extension of the growth; (4) its structural relationship to cutaneous adenoma; (5) the general characters of the cells and cell groups; and (6) cell nests. The conclusions arrived at were: 1. That epithelioma invariably commenced in the epidermis, passing through a more or less transient stage of papilloma before infiltration and ulceration commenced (this point was illustrated by ten specimens); rodent ulcer, on the other hand, commenced as a subepidermal tumour and sometimes remained as such without ulceration for many years. 2. Specimens of very small rodent tumours were submitted in which it was shown that the epidermis, hair follicles, and sweat glands were all normally represented, whilst the sebaceous glands were entirely replaced by new growth, therefore the growth must have commenced in the latter. 3. The tissues involved in the extension of a carcinoma, except in the earliest stage, were not regarded as affording reliable evidence in determining the origin of the tumour. 4. In regard to cutaneous adenoma the chief point elicited was that sebaceous adenoma was of the same type as adenoma of the mucous glands, which helped to explain why many cases of rodent ulcer were of the mucous carcinoma type of structure. 5. The cells of rodent ulcer were stated to be readily distinguishable from those of epithelioma, whilst the cell groups resembled the acini of glandular carcinoma rather than the branching trabeculæ of epithelioma. 6. Pseudo-pearls were frequent in rodent ulcer, but the true nest-cells were limited to epithelioma. In support of the above views microscopical specimens from thirty-three cases were submitted.—Mr. KANTHACK referred to some specimens of rodent ulcer without ulceration, in which the growth spread below the surface. He agreed that the condition was one of carcinoma of the sebaceous glands, though it was possible that it might originate from other structures; he had never found an instance in which it grew from the hair follicles. In one case which he had examined the connexion of the growth with the deeper cells of the rete was very marked. The lower cells of the rete were small, and often spindle-shaped and pigmented, and extraordinary pigmentation was often present in rodent ulcers. Many epitheliomata did not begin as papillomata; they might commence in ulceration and cause no raising of the skin at all. He objected to the term "precancerous condition," for ingrowing epithelium might occur with any kind of irritation, and he had seen it in laryngeal catarrh and in the tongue before leucoplakia developed; these were conditions quite independent of cancer.

Mr. EDGAR WILLETT showed a case of Rodent Ulcer of the Scalp. It differed from ordinary cases in its shorter history, being of only two years' duration. It occurred in a man aged seventy-two years, and the hair follicles were obviously affected, the hairs being deficient around the ulcerated part. Microscopically the cells were larger than those of ordinary rodent ulcer. It had been removed three years ago, and there was now some slight recurrence.

Mr. BOWLBY read a paper on 66 cases of Rodent Ulcer, 40 of which occurred in males and 26 in females. Their ages at the commencement of the disease were—

Between	10	and	15	years	1 case.
,,	15	,,	20	,,	2 ,,
,,	20	,,	25	,,	1 ,,
,,	25	,,	30	,,	5 ,,
,,	30	,,	35	,,	7 ,,
,,	35	,,	40	,,	10 ,,
,,	40	,,	50	,,	16 ,,
,,	50	,,	60	,,	15 ,,
,,	60	,,	70	,,	6 ,,
	Over 70			,,	3 ,,

This showed that instead of rodent ulcer being a disease essentially of old age, as was so commonly alleged, it was rather a disease of middle age and might commence in youth. The four youngest patients were males of the ages respectively of 14, 15, 19, and 21 years. In most of the cases the disease began as a wart, and in many of them there was a tumour growth of considerable size. In five cases there was no ulceration, and in one, where the tumour was situated on the neck, although ulcerated, it was as large as a Tangerine orange. In exactly half the cases the edges of the ulcer were raised and thickened and more or less indurated, whilst in twenty-one cases the edges of the ulcer were flat and sharply cut. There was, however, no difference in the microscopical structure of these varieties. It was pointed out that the descriptions by Moore of a flat ulcer with sharply-cut edges appeared only to apply to a minority of cases of rodent ulcer, and that in a very large number there were much lumpy outgrowth and some induration. The suggestion which was often made to explain these latter conditions was that epithelioma had been grafted upon a rodent ulcer; there was, however, no proof whatever that such an event ever occurred. In these varieties of form and clinical conditions rodent ulcer did not differ from other kinds of carcinoma, and in epithelioma there were sometimes

much warty growth and but little ulceration and at other times there was extensive ulceration with hardly any growth at all. In scirrhous carcinoma of the breast also there was usually a tumour of some size, and if the skin was infiltrated there might be a good deal of fungous outgrowth, whilst in examples of the atrophic variety there was often a diminution in size of the breast, and if ulceration occurred there was no outgrowth. Yet in both varieties of epithelioma or of scirrhus the essential characters of the disease were the same, and it was evident that the varieties of rodent ulcer did not differ from each other more than did those of other and allied tumours. The situation of the growth was almost invariably the face, fifty-five being found between the forehead and the upper lip, whilst the others were placed on the chin, the angle of the mouth, and the ear. The nape of the neck and the mid-dorsal region was also attacked. None of the tumours grew on the limbs. Microscopical examination showed in all the cases a growth of epithelial cells in alveoli. The cell masses were usually stellate or columnar in shape, their outline was more defined, and there was less small-celled proliferation than was found in epithelioma. The cells themselves were spheroidal or oval in shape, much smaller than those of the epidermis, and did not usually undergo any keratinous change. The new cell growth evidently developed from some part of the derma and not as an ingrowth from the epidermis and the appearance of the cells and of the cell masses seemed to point to their origin from the hair follicles. In one case such a development could be plainly traced. The following conclusions were drawn: (1) that rodent ulcer was more common in males than in females; (2) that it was not usually a disease of old age, but commenced most frequently between the ages of thirty and fifty, and might begin in youth; (3) that the growth might develop for several years before ulceration commenced; (4) that it very rarely occurred except on the face and adjacent parts; (5) that in the majority of cases where ulceration had commenced the edges of the ulcer were raised and thickened, and there was good evidence of tumour growth, but that such cases did not differ structurally from others where the edges were flat and sharply cut; (6) that the cell masses and the cells themselves were distinguishable from those of other tumours and possessed characteristics of their own; (7) that the epithelial nature of the cells and their enclosure in alveoli justified the inclusion of the growth among the carcinomata; and (8) that there were good reasons for believing that the growth commenced in the derma, and that it might originate in the hair follicles.—Mr. HUTCHINSON could quite corroborate all that had been said as to rodent ulcer not being confined to old age, but if the proportion to those living at each age were stated it would be found that a large number of them occurred in elderly people. Many cases, however, began in young persons, and he showed the photograph of a young man aged twenty-five in whom a rodent ulcer had begun at the age of fourteen, his father having suffered from one at the time he was born. He asked whether it could be accepted as a clinical fact that the lymphatic glands always escaped in rodent ulcer, whereas in epithelioma they were usually early affected. He said that in certain other forms of malignant ulceration of the face in which there was a tendency to rapid fungation there was also exemption of the lymphatic glands from infection. He was thinking particularly of the epithelioma which began in the cicatrix of lupus, which ran a different clinical course from that of rodent ulcer, but which did not affect the lymphatic glands. It was acute and rapid in its course, and he showed a photograph to illustrate it. He also referred to a disease which was most peculiar clinically, and to which he had given the name of "crateriform ulcer." It developed rapidly, with hard edges and deep excavation, but it never affected the lymphatic glands, nor did it invade the adjacent skin very quickly. The part of the face implicated certainly influenced the course of the disease, and he quoted cases to illustrate this. The tuberculous variety occurred at the end of the nose, and the progress was insidious when it began at the upper end of the whiskers. Difference in the kind of exciting irritation also induced difference in the character of the growth, and he showed a picture of a case following sun eczema, which illustrated this. He had also seen examples of multiple rodent ulcer in elderly people.

Mr. EVE showed a drawing of a Rodent Ulcer with considerable growth, but with the skin still intact. He likewise showed a drawing of a Rodent Ulcer in the Groin which commenced as a WART eighteen months before removal. The diagnosis was confirmed microscopically. Rodent ulcer occurred where the sebaceous glands were numerous and well developed, and where there was hair, and he thought that it might possibly originate in both these structures, for they both disappeared early in the course of the growth and might both be often found in a state of proliferation; there was also a close structural and embryological relation between the two. He thought that rodent ulcer bore the same relation to cutaneous adenoma that carcinoma of the rectum did to mucous polypus. Dr. Thin had pointed out many years ago that the origin of these growths was not from the rete mucosum or from the hair follicles, but from the sweat glands. The cells of a rodent ulcer were very difficult to isolate, and they showed a nucleus with a very small quantity of unformed substance round; this was not the case with epithelioma. Dr. Norman Walker of Edinburgh had demonstrated in some early cases distinct changes beginning in the sweat coils.

The debate was then adjourned till the next meeting.

The following card specimen was shown:—

Dr. CHARLEWOOD TURNER: Stomach from a case of Oxalic Acid Poisoning.

OTHER METROPOLITAN MEDICAL SOCIETIES.

HARVEIAN SOCIETY.—A clinical evening of this society was held on Thursday, Feb. 15th.—Mr. A. QUARRY SILCOCK showed a case of Tuberculous Iritis in a boy aged twelve, with signs of phthisis in the right lung. There was a mass of vascularised exudation about the size of half a pea at the inner end of the horizontal diameter of the right cornea, covering the anterior surface of the iris and filling up the corresponding part of the angle of the anterior chamber. Numerous punctate deposits of exudation were seen on the posterior surface of the cornea and in its deepest layers. There was slight ciliary injection and posterior synechiæ were numerous.—Mr. JULER remarked that the tumour on the iris was evidently of a tuberculous nature; the only affection for which it could be mistaken was gumma, but the latter was of a darker and more brick-red colour. A question of great importance in such a case was whether, in the absence of signs of tubercle elsewhere in the body, such an eye should be excised, in order to avoid general infection from this diseased centre.—Mr. D'ARCY POWER showed a case of Gummatous Synovitis of the Right Knee in a boy aged fourteen. Laryngitis, deep scarring of the skin, and absence of any evidence of ulceration of the articular cartilages distinguished the case from one of tuberculous arthritis.—Dr. CAGNEY showed a case of Progressive Muscular Atrophy with commencing Bulbar Paralysis in a man aged fifty-eight. The earliest symptoms had appeared nearly two years ago and the atrophy extended, slowly at first, but more rapidly in the recent cold weather. When first seen at the beginning of February the greater part of the upper extremities was wasted. There was weakness but no wasting of the lower limbs and the knee-jerks were normal. Ten days later speech became thick and there was difficulty in pronouncing linguals. A week after this the right knee-jerk had almost disappeared, while there were numbness and pains of the limbs and diminished galvanic excitability in the peronei on both sides. The palate, pupils and tongue were all affected and the diagnosis of progressive bulbar paralysis rested on these changes and on the affection of speech. It was remarkable that there were none of the spastic phenomena belonging to amyotrophic lateral sclerosis, the condition on which bulbar palsy is said most often to supervene.—Dr. JAMES TAYLOR remarked that Dr. Cagney's first case was very interesting, because if it was one of bulbar paralysis it was in an extremely early stage. Bulbar paralysis and progressive muscular atrophy were diseases affecting analogous structures—in the one the anterior horn cells in the cord, and in the other the cells of the bulbar nuclei. Involvement of the bulbar centres was not uncommon as a late feature of progressive muscular atrophy, and in a case under the care of Dr. Hughlings Jackson, which he had watched, the converse was true. In this case, one of bulbar paralysis, the patient had to be fed with the tube for several months, and before she died there was evident atrophy in the small muscles of one hand and also in the forearm. In this case the progress of the disease was from above downwards; in Dr. Cagney's case, on the other hand,

it was from below upwards.—Dr. Cagney also showed a case of Hysterical Attacks simulating Partial Epilepsy.—Dr. W. R. DAKIN then read a paper on Modern Methods of treating Post-partum Hæmorrhage. He was of opinion that, in view of two recently established methods of dealing with post-partum hæmorrhage and its immediate results it would be profitable to formulate a new line of procedure for use in cases where the accident occurs. The two methods of treatment alluded to were (1) plugging the body of the uterus, and (2) the infusion of saline (inert) fluids into the circulation, and the method of performing each operation in suitable cases was described fully. It was shown that they were both very simple, and required, with one exception (a cannula), no special instruments, and could therefore be undertaken before the patient had lost so much blood as to be in danger of life. The two methods were shown to be in accordance with physiological principles. Cases were described illustrating the valuable results obtained by their means, and reference was made to the experience of others. The advantages of plugging in some cases of laceration of the body or cervix uteri were shown and other methods of treating the acute anæmia were discussed. A summary of treatment was then suggested for severe cases of post-partum hæmorrhage as follows. If the placenta be still unexpelled it must be removed. Expression failing, the hand (aseptic) should be introduced as far as necessary, and the placenta removed from the uterus by peeling it off the placental site If hæmorrhage occurs after the placenta has been expelled hot water should be kept in readiness, several quarts will be required; the temperature should be about 118° F. in the douche tin or vessel containing the water; when no thermometer can be obtained the water should be almost as hot as the hand can bear. The patient should be placed on her back and a catheter passed if there is time, and the following procedures, in the order given, should be gone through, passing on to the next as each fails after a few seconds' trial. 1. Compress and knead the uterus through the abdominal walls with both hands, one hand lying along each side of the uterus, with the fingers pointing to the pubes. 2. Keeping up the pressure against the vertebral column with the left hand laid across the front of the uterus, pass the right hand up to the fundus, clear out clots, and compress the uterine walls between the two hands. 3. Pass the internal hand into the posterior vaginal cul-de-sac and press the fundus down on to it with the external one, so that the uterus is squeezed in an anteflexed attitude. It can be thus held with little or no bleeding until the hot water is ready. 4. Inject the hot water into the uterus, passing the nozzle right up to the fundus and ensuring a free escape for the excess. If the uterus does not contract after two or three quarts have been used, or relaxes again after contracting, then—5. Plug at once. If the patient is suffering from severe acute anæmia and collapse, perform transfusion; if she is moderately blanched do auto-transfusion or slowly inject saline fluid into the bowel.—Dr. HERMAN doubted whether plugging the uterus did actually cause contraction, and remarked that it was not invariably effectual in staying the hæmorrhage. From the reports of the series of cases in which this method had been adopted, it was obvious that the majority were not cases of severe post-partum hæmorrhage. He laid stress upon the fact that the main element in the treatment of post-partum hæmorrhage was prevention rather than cure.—Dr. MILSON remarked that Dr. Dakin had not referred to the value of galvanism in controlling post-partum hæmorrhage.—Dr. BOXALL proposed bandages of felted cotton, known under the name of "lintine," as a suitable material for packing the uterine cavity. Hot-water injections, to be useful, must be between the temperatures of 110° and 117°. The hypodermic injection of ergotinin could be used to supplement other measures.—Dr. LEITH NAPIER pointed out that practical midwifery owed much to that grand old Nestor of general practitioners, Hamilton of Falkirk, whose practice in instrumental delivery and in the treatment of post-partum hæmorrhage had done so much to save the lives of mothers and infants.—Dr. HERBERT SPENCER had only once in 15,000 labours failed to check post-partum hæmorrhage from the placental site by the ordinary methods of emptying the uterus and compression and hot injections; that case he successfully treated with tampons soaked in a solution of perchloride of iron. In a similar case he would now prefer to use iodoform gauze, though he thought it was with extreme rarity that it could be necessary to plug the body of the uterus. For hæmorrhage from lacerations in the cervix and vagina (which were often overlooked) he had repeatedly employed iodoform gauze or iodoform wool tampons, and considered them to be an excellent means of immediately stopping the hæmorrhage and far more practical than suturing the tear. For the collapse following post-partum bleeding transfusion of normal saline fluid was very valuable. He believed he was the first to make a systematic use of this method of treatment.[1] He exhibited his transfusion bottle and a wire clip, which, with a piece of tubing and a cannula, enabled an irrigating apparatus to be improvised from an ordinary jug or bottle.—Dr. AMAND ROUTH thought there was no doubt that plugging the uterus with gauze did promptly arrest hæmorrhage, but he did not think that such arrest could always be explained by premising that uterine contraction and retraction had been induced.—In reply, Dr. DAKIN thanked the society for receiving and discussing his paper. He thought that if a battery was handy and ready to work at once it might be worth trying; but it would be a cumbrous article to carry to every midwifery case. No doubt distending the uterus with a plug was contrary to physiology, but in his experience the uterus had always contracted down quickly and compressed the gauze into a small mass, not allowing itself to be distended. It was, of course, far better to get the uterus to contract without plugging it by stimulation in other ways, and this had been advised in the paper. Dr. Boxall thought that water at 118° might paralyse the uterus instead of stimulating it. It was possible, but he (the speaker) believed he had often had good results at this temperature, and, if it were 118° in the douche-tin it would be less hot by the time it reached the uterus. Ergotin acted too slowly or not at all in very severe cases. He agreed with Dr. Spencer as to the rarity of severe post-partum hæmorrhage. The cases recorded were the only two which had occurred in the maternity department of St. George's Hospital in three years.

HUNTERIAN SOCIETY.—An ordinary meeting of this society was held at the London Institution on Wednesday, Jan. 24th, Mr. F. GORDON BROWN, President, being in the chair.—The PRESIDENT announced the gift of books by Dr. Bastian, to whom a unanimous vote of thanks was accorded. He then showed a man, with a Systolic Aortic Bruit and other Signs of Atheroma, who two years before had been injured in the left foot. The left dorsalis pedis artery was now aneurysmal, and pulsation had been cured by recent ligature of the anterior tibial.—Dr. HINGSTON FOX showed a boy twelve years of age suffering from Graves' Disease. The patient had been brought to St. Luke's Dispensary occasionally since infancy for minor ailments—eczema, enlarged glands, bronchial catarrh, scarlet fever, &c. Six years ago nervous twitches and over-acting heart were noted as being present. He was one of three children, one of whom was stillborn, and the third died from convulsions. He had been attending for sixteen months past. At first only impaired nutrition with dyspepsia was observed; tremor of the hands had been noticed for twelve months, and proptosis for eight months, with irritable knee-jerks. Diarrhœa became troublesome in the summer and proved obstinate, especially from 4 to 7 A.M. daily, but was eventually partly controlled by enemata of tannic acid and the internal administration of opium. Rapidity of the heart's action had only developed during the present winter; the pulse rate rose to 115 and was seldom as low as 90. He had been treated for the previous six weeks with a mixture of iodide of potassium and bromide of potassium, with iron and belladonna; of the latter he was given one minim and a half of the liquid extract (equivalent to twenty-one minims of the tincture) three times a day, besides cod-liver oil. The diarrhœa had ceased and he was altogether better, so that, with the exception of the proptosis and slight tremors, there were no very apparent morbid signs. No thyroid enlargement could be made out, but the other three cardinal symptoms of the disease were present; it was unusual to see it at so early an age.—Dr. DAWSON showed a female fifty-six years of age with Aneurysm of the Right Innominate Artery, which was the size of an egg and of five years' duration. Her symptoms were occasional pain in the shoulder and præcordial region, sleeplessness, and dyspnœa and palpitation on exertion. She had a diastolic bruit at the apex, and a double bruit was heard on the right side at the base. Dr. Dawson considered that surgical treatment was uncalled for at the

[1] THE LANCET, June 11th and 18th, 1892.

present time.—Dr. ARNOLD CHAPLIN exhibited a case of Bronchiectasis, treated with Creasote Inhalations. The patient, a girl sixteen years of age, gave the following history. When a child she had an attack of whooping-cough, and since then she had had a paroxysmal cough, coming on in the morning on waking, and often culminating in vomiting. This cough had been attended for the last three years with profuse and extremely foul expectoration, which came up in gushes and filled the spittoon, rendering her a trouble to herself and to those with whom she associated. In addition to this she had severe dyspnœa on exertion, had lost flesh, and was troubled with night sweats. On examining the chest there was noticed some slight fulness at the right base, especially behind; the percussion note was impaired almost to dulness below the inferior angle of the scapula; and just below and externally to the angle the note was tubular. This impairment passed round to the front below the nipple. On auscultation there were to be heard creakings, crepitations, coarse and bubbling râles (attended with weak bronchial breath sound), and bronchophony, which became intensified after coughing. The patient had been in the City of London Hospital for Diseases of the Chest, under the care of Dr. Thorowgood. Various remedies were tried with a view to diminishing the fetor of the expectoration, but without success. She was again admitted to hospital towards the end of last year and by the courtesy of Dr. Thorowgood was treated by Dr. Chaplin in a different way. The method of treatment was as follows. Some coal-tar creasote, which consists principally of pyridene bases, phenates, and acridin, together with other products of the distillation of coal-tar, were obtained, and a small chamber was fitted up and made as air-tight as possible. Some of this creasote was put in a dish and heated by a spirit lamp until the fumes were given off in great quantity. The patient was then placed in the chamber and inhaled the fumes with which it was filled for one hour every day. The inhalation produced violent coughing, with the expulsion of much expectoration. After three inhalations the morning paroxysm of coughing was absent, and the expectoration became sweet. The treatment was then discontinued for two days, and the old state of things returned, but it was soon removed on the resumption of the treatment. The patient had had fifty-four inhalations lasting one hour, with the result that the expectoration was much less and had remained free from odour for a month without any creasote inhalation whatever. This had never happened before for the previous three years. She stated that her breathlessness and cough were but trifling now, and that the night sweats had ceased. It was submitted that this method, in this case at least, had done what other forms of treatment had proved to be incapable of accomplishing—viz., freed the expectoration from that most distressing of all symptoms in bronchiectasis, fetor.—Dr. F. J. SMITH showed a case of Transposition of Viscera in a boy fifteen years of age who was in good health.—Dr. F. C. TURNER showed a girl twelve years of age who presented Multiple Exostoses of the Ribs, Clavicles, Humeri, and Tibiæ.—Dr. BATTEN exhibited a Pulse Manometer recently invented by him. He said that the pulse was obliterated by one finger, which pressed upon a spring attached to a button, the latter resting upon the artery, and the force required was indicated upon a dial attached.

SOCIETY OF ANÆSTHETISTS.—At the third ordinary meeting of this society, held on Thursday, Jan. 18th, at 20, Hanover-square, W., the President, Mr. F. WOODHOUSE BRAINE, in the chair, Dr. DUDLEY W. BUXTON read a paper entitled "A Note on Cardiac Asthenia in relation to the Use of Chloroform as an Anæsthetic." After adverting to the importance of "shock" due solely to the specific action of chloroform upon the organism, it was pointed out that the effects of chloroform were brought about by overdosage. This itself was no fixed or determinable quantity, even for the same individual at different times, but depended partly upon the "personal equation" at the time of the administration and partly upon the physical conditions of the administration. Overdose might be due (1) to increased intake, and (2) to lessened output. It was argued that there was both experimental and clinical evidence to show that the heart became profoundly affected during the use of chloroform, possibly as the result of chloroform *plus* asphyxia (Lauder Brunton), or as the result of a specific action upon the myocardium (McWilliam). After repeated inhalations in dogs chloroform could produce a condition akin to "fatty heart," and such hearts were arhythmic and feeble in action. McWilliam had shown that under chloroform the cardiac muscle was prone to acute dilatation, and to a condition which he had termed "delirium cordis," akin to the extreme arhythm observed in some pathological states. Some patients, notably children after acute diseases, and especially influenza, revealed feebleness of heart or "cardiac asthenia" which was peculiarly obnoxious to chloroform, in that there was a marked loss of resiliency and diminution of reserve of force. In these patients the changes were brought about early, and the heart showed little or no power of recovery; many cases of death were, it was suggested, the result of this condition. Such cases should be carefully watched for, and, if possible, chloroform should in them be avoided or its depressing effects abrogated. Prolonged fasting, undue struggling, and change from the supine to the sitting or standing postures were peculiarly dangerous.—Mr. WOODHOUSE BRAINE said that he seldom gave chloroform now, but preferred ether. He thought that the reserve store of energy to which Dr. Buxton had alluded was seldom, if ever, quite normal; the condition of the patient, who was usually suffering from disease, precluded that. In asthenia he thought it better to avoid the use of chloroform altogether.—Dr. HEWITT could not accept Dr. Buxton's views, for it was well known that the most vigorous and healthy were particularly liable to fall victims to chloroform, while, on the other hand, the very old, or those suffering from the most advanced cardiac disease, passed through chloroform anæsthesia with but little disturbance. He fully agreed that chloroform had a most depressing effect upon the heart; that it was desirable to watch both the circulation and respiration; and that it usually caused death in human beings by cardiac arrest, the question whether the breathing or the pulse first showed signs of failure being of but little importance. Provided that free respiration was maintained, he did not think that cardiac asthenia need be feared, and such a condition might even be protective; such patients, requiring less chloroform, did not struggle excessively and were less liable to respiratory and other forms of spasm. In his judgment it was this respiratory spasm, occurring, as it was liable to do, in persons of great muscular development, that led to circulatory failure and death.—Dr. SILK did not think that Dr. Buxton had made it quite clear what was meant by the term "asthenia." If he implied a definite pre-existing pathological condition the term might certainly be of some value; if, on the other hand, the term was to be applied to what was usually known as "a feeble heart," he hardly thought that any great advance had been made by the introduction of a technical expression which conveyed no more real information than the term "hysteria" as applied to certain nervous phenomena of unknown pathological origin.—Mr. ROWELL thought that chloroform was a direct poison to the heart muscle and that any limitation to the due supply of air was especially dangerous. He considered that pre-existing cardiac asthenia increased the danger with any anæsthetic. He quoted the case of a feeble old man in whom respiratory and pulse failure had occurred on change of posture both with ether and chloroform.—Dr. DUDLEY BUXTON, in reply, admitted that cardiac asthenia was not an easy condition to diagnose, but he submitted that it was a very definite state and one which clinical experience would differentiate, due regard being had to rhythm, force, and resistance of the heart's action and arterial pulse &c. He pointed out that the hearts of old people were presumably particularly resistant, having survived the perils of life, while the habits of the vigorous navvy were often such as to render him peculiarly sensitive to surgical injuries, acute illnesses, or chloroform. He did not depreciate the value of chloroform; personally he used it very largely and regarded it as a useful, though a terribly powerful, drug. He agreed with Mr. Braine that practically everything could be done with ether that was done with chloroform, but many surgeons preferred chloroform, and hence anæsthetists were called upon to give it.

PROVINCIAL MEDICAL SOCIETIES.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Feb. 15th, the President, Mr. CHAUNCY PUZEY, in the chair.—Dr. ABRAM showed a pathological specimen of Aneurysm of the Aorta and another recent specimen of Hæmorrhage into the Pons Varolii, where, during life, the pupils were dilated instead of contracted, as is usually the case.—Dr. BRIGGS showed a Uterine Polypus which he had removed two days previously from a woman aged forty-one, who had had seven children, the youngest being four years

old. The growth lay in the vagina and was attached by a stalk to the anterior surface of the body of the uterus. There had been hæmorrhage for nearly two years and a half and a continuous watery discharge for one year. The growth had the naked-eye appearance of a sarcoma.—Mr. HUGH E. JONES recorded the case of a young married woman who had Influenza with Acute Middle Ear Catarrh, which spread through the vestibule to the posterior surface of the petrous bone. Extra-dural abscess, caries of the petrous bone, extension through the petro-occipital suture, and a suboccipital periosteal abscess rapidly followed. The bone was freely opened up, and all seemed to be doing well, when, three weeks later, purulent meningitis developed and death occurred in three days.—Mr. BANKS showed a case where there had been a badly united fracture with shortening of the right leg and an unreduced dislocation of the left hip; by dividing the neck of the left femur the two legs were made the same length, with very great benefit to the patient.—Mr. PUZEY showed a young man who had recovered the perfect use of the elbow-joint after very serious injuries, including division of the biceps just above the tendon; the divided ends were pared and carefully sutured, and complete union followed.—Dr. PERMEWAN read a paper on Some Points in Laryngeal Paralysis, referring in particular to Sémon's law of the tendency of the abductors of the cords to become paralysed before the adductors. Various explanations of this law were mentioned, and its general truth was fully accepted. Dr. Permewan also stated the great value of abductor paralysis as a means of diagnosis in nervous diseases, particularly in locomotor ataxy, where paralysis of one or both cords was not infrequently the first sign of the disease. He emphasised the fact that abductor paralysis might exist without any symptoms and insisted on the importance of laryngoscopy in doubtful cases.—Dr. HUNT said that Sémon's law was now almost universally recognised, though there were a number of cases not conformable to it. Bilateral abductor paralysis did not always mean organic disease, as he had seen it follow a laryngitis and end in recovery.—Mr. BARK could not agree that all cases of bilateral abductor paralysis were due to central disease, as he had seen cases to the contrary.—Dr. BARR said that the more marked involvement of the abductor muscles in organic paralysis of the larynx had a parallel in many cases of multiple neuritis, and notably in lead palsy.—Dr. BRADSHAW, Mr. BICKERTON, and Dr. ABRAM also took part in the discussion.

MANCHESTER MEDICAL SOCIETY.—On Feb. 7th the President of this society, Professor DIXON MANN, delivered an inaugural address on a Few Recent Remedies. He dealt with synthetically prepared drugs, with extracts obtained from animal tissues, and with germicides internally administered for the purpose of combating septic diseases. Amongst the animal extracts one was mentioned which has some claims to be regarded as a new and probably useful addition to their number. At Dr. Mann's request an extract of the red marrow of bones had been prepared for administration by the mouth in cases of simple anæmia. The number of red corpuscles per cubic millimetre in each case was counted before and after the administration of the extract, and the results obtained were encouraging, since they showed a marked increase—in some cases of more than one million red corpuscles per cubic millimetre—in the course of from four to nine weeks.—Mr. EDWARD ROBERTS then showed three cases of Vascular Tumour of the Orbit. The first was a cavernous angioma which had been successfully removed from the outer angle of the orbit in a child two years old. The second was a large cavernous angioma in a girl aged sixteen. The tumour had been growing for thirteen years and had attained a large size, pushing the lid and eye forward. Electrolysis had been performed four times; the growth had become more solid, but had not diminished in size. The third tumour, probably a blood-cyst in connexion with a vein, occurred in a woman aged twenty-nine. During the patient's first confinement, ten years ago, the left eye became ecchymosed, and this disappeared, leaving a small tumour.—Dr. RAILTON read notes of a case of Congenital Rickets.—Dr. HUTTON mentioned a case of Psoriasis in a girl aged eleven, in which treatment with Benger's thyroid extract gave disappointing results. For a time no change occurred, but, later, free desquamation took place, and the general condition became worse. The extract was then discontinued, and chrysophanic acid ointment was resorted to with benefit.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—At the meeting of this society on Feb. 7th, Dr. WALTER HUNTER, President, being in the chair, Dr. MACKENZIE showed a child from whom could be elicited a peculiar Succussion Note from the Head. The sound was heard most distinctly on suddenly extending the head.—Dr. ELDER exhibited a woman whose face and neck were of a dark, metallic, bluish-black colour, the staining, which was not present on other parts, being, he thought, due to taking silver internally.—Mr. BURNIE then opened a discussion on the Occurrence of Death during the Administration of Chloroform. He said that chloroform when inhaled might cause death in three ways. 1. By paralysis of the respiratory centre and consequent stoppage of respiration, while the heart was still acting. Animals when purposely killed by chloroform died in this way. It required ten or twelve minutes to kill a dog in this manner, and it would probably require at least as long to so kill a human being. He believed that human beings never died from primary respiratory failure if the heart was acting efficiently. 2. By anæmic syncope. Such deaths were appallingly sudden. The patients died as if struck by lightning (Snow and others); *wie durch Zauberschlag* (as if by magic) (Kappelen). They occurred frequently without warning, a short time after the commencement of inhalation and when only a small quantity of chloroform had been used; also when the patient was not completely anæsthetised and after the inhalation had been discontinued. More than 50 per cent. of all deaths from chloroform took place before the commencement of the operation. The speaker was inclined to agree with Dr. Robert Kirk of Glasgow that the deaths now under consideration were due, not to the direct action of the drug, but to the inhalation being stopped at too early a stage. The heart cavities in such cases were found to contain very little blood. 3. By syncope with an over-distended right ventricle. This form of death was apt to occur in patients whose nutrition was impaired from disease or from any other cause, such as free indulgence in alcohol, or whose hearts were the seat of local disease. There were unually in such cases great excitement, violent struggling, with muscular rigidity, great lividity of the surface, and distension of superficial veins. The pulse, when it could be felt, was very frequent and small; it stopped suddenly, and respiration ceased at the same moment, or soon afterwards. The cause of the heart failure was over-distension of the right side of the heart and of the artery and veins attached to that side. The cause of the distension was the direct obstruction to the passage of blood through the lungs from the right to the left side of the heart, being the local effect of the chloroform vapour in the air cells. The way to avoid accidental death from inhalation of chloroform was to give the drug freely, with plenty of air; to give it pleasantly; and, above all, to give it continuously until the patient was in a state of complete anæsthesia. In the discussion which followed, the PRESIDENT, Mr. JOSEPH WHITE, Dr. TRESIDDER, Dr. ELDER, Mr. TOMPSETT, Dr. STEAVENSON, Dr. WATSON, Dr. WARING, Dr. MICHIE, and Dr. CATTLE spoke, and Mr. BURNIE replied.—Several specimens were subsequently shown, among which was one brought forward by Dr. STEAVENSON for Dr. C. V. TAYLOR. This was a tuberculous omentum removed by operation; the patient had also had general abdominal tuberculosis. The abdomen was washed out with iodine lotion, and the patient, three weeks after the operation, was in a fairly satisfactory condition.

THE LONDON COUNTY COUNCIL.—At the meeting of the County Council on Tuesday last the recommendations of the Main Drainage Committee—namely, that an extension of the Wandle branch sewer be made for proper main sewer accommodation in Lower Streatham and that a new sewer be constructed from Hammersmith-road to Walham Green—were agreed to. It was also agreed to appoint two additional inspectors, male and female, under the Infant Life Protection Act.

THE RICHMOND ROYAL HOSPITAL.—On the 17th inst. the Duke of Teck presided at the annual meeting of the subscribers to this hospital, when it was reported that the subscriptions at the dinner held lately amounted to the sum of £1871. This amount was given towards the erection of the Princess May ward, and a further sum was raised for the purpose of founding the Hilda May cot, the subscriptions for this purpose amounting to £3832, including a donation from the Queen and £1000 from Mr. Charrington. At the same meeting a resolution was passed to the effect that an isolation ward be erected at a cost of £2665 and that the construction of the administrative portion of the new building be deferred.

Reviews and Notices of Books.

The Diseases of the Male Organs of Generation. By W. H. A. JACOBSON, M.Ch. Oxon., F.R.C.S., Assistant Surgeon, Guy's Hospital; Surgeon, Royal Hospital for Children and Women. With Eighty-eight Illustrations. London: J. and A. Churchill. 1893.

WE gather from the preface to this work that it is the result of more than ten years' labour and thought, and we therefore approach it expecting to find the subject treated in a very full and masterly way. There is room for such a treatise. It is now many years since the last edition of Mr. Curling's work on the Testis was issued, and in the interval much has been done in elucidating the pathology and improving the treatment of many of the diseases of this organ. Elaborate and valuable articles and monographs on this branch of surgery have appeared in France and Germany, and English workers and writers have not neglected this field. The time has come to gather up the results obtained and to formulate our present position—and the man has come too. Those who turn to this book expecting much will not be disappointed. It is the result of considerable personal experience and of wide research into the writings and opinions of others, which are discussed with great ability, acumen, and candour. Mr. Jacobson is no literary novice. His articles in the "System of Surgery," edited by Holmes and Hulke, were generally recognised as among the best in that work; his treatise on the Operations of Surgery has also won a high place; and the volume before us will only add to a reputation already high.

In two points we think the value of this book might have been increased, and as our criticisms are so few and small we will place them in the forefront. A brief but accurate description of the normal anatomy of each organ would have been a valuable introduction to a consideration of its diseases. We doubt not that considerations of space were allowed to prevent this, but we think that it might have been done even at the expense of some compression of the text. The other point is the great number of notes in small print at the foot of the pages; very many of these might have been incorporated in the text with great comfort to the reader. Some of the illustrations are old, borrowed from the writings of Curling and Osborn, and in these days of lavish and greatly improved illustration it may be suggested that more originality and more thought might have been expended here. These, however, are minor details, and when we come to deal with the solid work of the book itself they are forgotten in its real excellence.

The opening chapters deal with the Transit of the Testicle and the Abnormalities in the Development and Position of the Gland, a subject full of interest and importance. The various questions as to the causes and consequences of these errors of development are amply discussed. Mr. Jacobson is of opinion that the function of a retained testicle gradually becomes lost; the higher up it is fixed the less it is developed. At first it may be functionally active, but this passes quickly away, and wherever retained it generally becomes useless. We may here notice that the question of a twofold function of the testicle is nowhere considered, and yet it is of the highest practical importance and one that has recently come into some prominence. In view of the widespread and grave changes produced by the non-development or early total removal of both testicles it is impossible to regard them merely as secreting glands concerned alone with the propagation of the species. Such a view is altogether too "mechanical." The practical importance of the subject appears when we have to consider the propriety of removing imperfectly descended testicles or the fully developed testicles of the subjects of extirpation of the penis. The last word is not said when we assert that the organs are no longer sexually valuable, for this is not the same as stating that they are of no functional value. We have no exact knowledge of the influence of the testicles on tissue metabolism comparable to that of the thyroid gland, but what we have recently learnt of the function of this latter body should make us hold an open mind on the subject of the general or local nutritive influence of the testicle. The ridicule and scepticism with which Brown-Séquard's injections of testicle-extract were greeted have been now replaced in many quarters by patient inquiry, although the results as yet attained do not bear out the prognostications of the pioneer of "animal extract" treatments.

The chapter on Hydrocele is a long and useful one. The author does not clear up the difficulty about the nature of the effusion. He rejects the view that it is an inflammatory one; but he fails to show what it is, and asserts that inflammation follows upon the occurrence of hydrocele from the constant irritation of the part. The case is undoubtedly full of difficulty, but we are not prepared to reject the inflammatory theory, especially when we remember, in addition to the arguments stated by Mr. Jacobson, that in tuberculous and syphilitic diseases of the testicle—both of them unquestionably inflammatory in their character—hydrocele is often met with having many of the characters of chronic vaginal hydrocele. Then, again, all surgeons have seen the condition follow quickly upon a gonorrhœal epididymitis. The treatment especially recommended is excision of the tunica vaginalis; the author has not had a large experience of the injection of carbolic acid, or we think he would have spoken of it in rather warmer terms than he does. He does not mention that the injection of small quantities of the acid (from ten to fifteen minims) is quite as satisfactory as the introduction of one drachm or more. We are surprised to find that acupuncture is recommended for infantile hydrocele. Such a treatment is only rarely necessary; the great majority of cases disappear if the parents and surgeon have patience.

The chapter on the Inflammatory Affections of the Testicle is well written, and in our opinion needs but one alteration, and that is in the nomenclature. The common inflammation, such as occurs in gonorrhœa, is called epididymo-orchitis, and this in the face of such a statement as this: "In all the subacute, and in most of the acute, cases of epididymitis, the testis is practically healthy." It is misleading to use a name which certainly implies the presence of inflammation of the testis for a disease in which the inflammation only very rarely involves that organ. It ought to be called epididymitis, and the name epididymo-orchitis should be reserved for that very small minority of cases where the disease spreads into the body of the testicle. The clinical evidence, as well as the pathological, is conclusive that the body of the testicle is but rarely involved in the inflammation arising in the course of gonorrhœa. The treatment chiefly relied upon for this affection is the ice-bag—Otis's coil, with iced water circulating through it, is a better way of applying cold; but treatment by cold is very difficult to get carried out really efficiently, and it never can be by a large class of hospital out-patients. For these cases heat is to be recommended and will be found comforting and beneficial.

We have not space to follow the author through each of his chapters, every one of which bears evident traces of much study and thought. Mr. Jacobson's views on Sexual Hygiene are clear and straightforward. He quotes with obvious sympathy Sir James Paget's well-known sentence in which he declares that he would as soon order or assent to an act of theft or any other breach of the Decalogue as advise an act of fornication. Dr. Gowers' more recent utterance on the same subject is also quoted approvingly, and another clear voice is raised on behalf of chastity.

We are not now able to go into more of the many

interesting questions with which Mr. Jacobson deals. We have said enough, we trust, to make our readers anxious to read the book and to see for themselves how well the task has been accomplished.

Investigations on Microscopic Foams and on Protoplasm. By O. BÜTSCHLI, Professor of Zoology in the University of Heidelberg. Translated by E. A. MINCHIN, B.A. Oxon. London: Adam and Charles Black. 1894. pp. 379. With 12 plates.

THE movements of protoplasm have been investigated and described by a multitude of observers for many years past, and numerous experiments have been made by Kühne and others on the influence of physical agents on their activity. The microscopical characters of protoplasm have also, as might be expected, been carefully examined and various views have been expressed in regard to its structure. The author of the present work, well known as the writer of the important volume on the Ciliata in Bronn's "Klassen und Ordnungen," claims to be the first who has attempted to show that the phenomena of protoplasmic movement and of the division of the protoplasmic cell body are explicable by, or at least are associated with, a special property of fluid bodies—namely, surface tension—and that movements very similar to those of protoplasm can be seen in certain forms of emulsion. That protoplasm presents a reticular structure was shown nearly thirty years ago by Frommann and others, and Bütschli not long afterwards endeavoured to prove that a gradual transition might be traced from the single scattered vacuoles found in the protoplasm of many protozoa to completely alveolated or reticular protoplasm, "where the alveoli are so densely crowded that their real protoplasmic walls take on a honey-combed arrangement which in optical section appears reticular." Just such a structure can be seen in oil and soap foams, and movements resembling those of protoplasm may also be observed, which it is the object of Professor Bütschli to describe in this work.

The first investigations here described are on oil foams as differing from mere emulsions. His first success was effected by thoroughly mixing a thick solution of potash soap with benzine, which forms at the upper part, when allowed to rest, a fine foam or froth, which he has kept apparently unchanged for two years; but better results were obtained by grinding down with a fatty oil—as olive oil—a small quantity of some soluble substance—as common salt—and then placing it on a cover-slip, inverting it over a drop of water on a slide; active streaming movements may now be seen, which can be well followed if Indian ink is mixed with it, the water in the higher regions streaming towards the drop, and in the lower away from it, the movement being explained on the supposition that "the water immediately surrounding the drops takes up salt solution either by diffusion or by the direct emergence of single particles, becomes specifically heavier, thereby sinks down on the slide and spreading out upon it streams in all directions away from the drop." In the course of twenty-four hours the drops of oil mixture enlarge and become completely opaque and milk-white, the particles of solid substance have vanished and the whole mass presents a finely structured foam. The water contained in the alveoli can be removed and replaced by glycerine, and the foam is thus rendered fit for microscopic investigation. Such a froth is composed of a system of thin lamellæ of oil, the arrangement of which is always such that three lamellæ meet at one edge, each making, with its neighbour, an angle of 120°. The three edges meet in a nodal point, forming various polyhedral figures, in which the rule obtains that the angle which every two edges form in the nodal point amounts, according to Plateau, who has specially investigated this subject, to 109° 28′ 16″, and thus the general disposition and form of the alveoli are that of a system of nearly regular dodecahedra.

Professor Bütschli describes in considerable detail the appearances presented by such foams under the microscope. Droplets prepared in the manner above stated exhibited, when they were exposed to a current of water, creeping movements under the cover-glass, first in one and then generally, but not always, in the opposite direction; in one instance the activity of movement was sufficient to make it traverse 0·45 mm. in one minute; streaming movements resembling those observed in such protoplasm as Æthalium were seen, and several woodcuts are given which show the alteration in form of the droplets in the course of one or of a few minutes. The application of induction shocks caused a temporary arrest of the movements, which recommenced after a time. Professor Bütschli proceeds to consider the characters of the protoplasm of various members of the Protozoa, of that of the Suctoria, Ciliata, Flagellata, Radiolaria, and Heliozoa, and of other forms of protoplasm, such as that found in egg cells, blood corpuscles, nerve and pigment cells, and in the cells of plants, and dwells upon the great resemblance that is presented between the appearances they present and those of artificial oil lathers. This completes the first part of the work.

The second part is occupied with a historical review of the opinions that have been held in regard to the reticular characters of protoplasm and the criticisms that have been directed against his own views. One of these by Künstler, quoted by himself, is so apposite that we here reproduce it. "If on account of the ease with which it enables the structure (of protoplasm) to be understood I willingly accept the comparison made by Bütschli between the constitution of soap froth and protoplasm, it is impossible to do so in regard to his recent experiments on emulsions, which lead him to explain the structure as the result of the mixture of two fluids. However specious his statements may be I must oppose this interpretation. Protoplasm is a living, highly organised substance, the nature of which is the result of a particular process of evolution, which has nothing in common with these mixtures. To compare these two orders of facts seems to me to be about as useful from the point of view of a real comprehension of this structure as to compare a Medusa to an umbrella, an Echinus to a pincushion, or certain Bryozoa to lace. They are chance resemblances without having any other feature in common." It is only fair to add that Bütschli in no way contests—but, on the contrary, fully recognises—that protoplasm is a living substance. He only differs from Künstler in attempting to explain on physical grounds some of the peculiar manifestations of activity which distinguish protoplasm and make it a living as opposed to a non-living substance. He does not for a moment think he has produced living protoplasm, but only desires to show that bodies were successfully manufactured which not only possess a great similarity to living protoplasm in their structure, but also offer certain peculiarities which have hitherto only been observed in living protoplasm. This, we think, is a fair reply. The work is illustrated by several plates showing the structure of various forms of protoplasm, and those of our readers who are interested in such subjects will find much to interest them.

A Treatise on Hygiene and Public Health. Edited by THOMAS STEVENSON, M.D., F.R.C.P., and SHIRLEY F. MURPHY, M.R.C.S. Vol. II. London: J. & A. Churchill. 1893.

[SECOND NOTICE.]

IN a previous review[1] of Dr. McVail's article on Smallpox and Vaccination contributed to this treatise, we had reached the point of protection against variola. The author points out that individual protection against small-

[1] THE LANCET, Jan. 6th, 1894.

pox attack can be obtained in three ways: by natural small-pox, by inoculated small-pox, and by vaccination. Formerly protection once acquired was looked on as permanent and absolute. Cases of second small-pox, usually very mild, were called horse-pock, swine-pock, &c., and their variolous nature was denied, just as in Jenner's time the variolous nature of post-vaccinal small-pox, also very mild as a rule, was denied. From whatever cause obtained, the amount of protection varies according to the thoroughness of the protective procedure. Severe small-pox gives more enduring protection than mild small-pox, small-pox inoculation gives most protection when followed by eruption, and a complete and multiple vaccination gives more lasting protection than does vaccination resulting in a single small vesicle. In the present century a second attack of small-pox is less frequent than formerly, because as a result of the practice of vaccination a primary attack of small-pox usually comes later in life, so that the protection it affords does not wear off in time readily to allow of a second attack.

Protection by small-pox inoculation or variolation is dealt with in the article at considerable length. Though introduced into general notice in England in 1721 the practice, under the name of "buying the small-pox," seems to have existed in Wales from time immemorial, and it is certainly remarkable, as pointing to its possible antiquity, that it was similarly designated in Italy and the East. Following the introduction of the practice in 1721, the simplicity of the Eastern operation was discarded for a severe operation, with untoward results, which soon brought inoculation as a whole into disfavour. After 1740 it began to revive, and in the hands of the Suttons and Dimsdale it became a mild and fairly safe procedure, with only one death in perhaps 300 or 400 cases; but it perhaps tended to spread the disease by atmospheric infection, and it is a moot question whether in this way it did not do as much harm as good. In Scotland it lessened small-pox in many places. Obviously it would be most useful where it was very generally practised, and where in this way it left comparatively few persons liable to atmospheric infection.

Coming to the subject of vaccination, the historical method is adopted in dealing with it. Jenner's views are summarised, and Woodville's operations at the Small-pox Hospital are discussed. The extent to which the variolous test was applied is indicated and its value appraised by Dr. McVail. Next follows an appreciative review of the inquiries of Ceely, Estlin, Badcock, and Bousquet. In particular, the relationship of small-pox to cow-pox is discussed, and the author's own views are indicated in the statement that "in the meantime the whole tendency of the evidence is to show that vaccinia really is, as Jenner had supposed it, variola of the cow, and that the virus of human small-pox is so attenuated in the bovine animal as to be deprived both of its quality of atmospheric convection and of its tendency to cause a generalised eruption," and that in this way the change in the calf from variola to vaccinia has the effect of "removing the objectionable and retaining only the valuable part of the original disease."

Under the heading of "The Value of Vaccination," after summarising the early historical facts bearing on the subject, Dr. McVail enters at length into the statistical evidence. Dealing with the remarkable decline in the prevalence of small-pox since the introduction of vaccination he shows that this cannot be attributed either to the decline in the practice of variolation or to the increased attention to sanitation. Having given the death-rates from other zymotic diseases, he goes on to argue that in reference to sanitation each disease has to be considered by itself. Removal of fæcal impurities has diminished enteric fever, but has not affected measles. Diminution of personal filth and overcrowding has lowered the typhus fever rate, without reducing the diarrhœa rate. Vaccination has diminished small-pox without similarly affecting whooping-cough, and while general cleanliness and purity of food and water are useful against all diseases, yet "the lessening of small-pox cannot be set down to improved drainage any more than can the lessening of enteric fever be set down to vaccination." In London, owing partly to the existence of the great small-pox hospitals, the decline in small-pox has not been so great as in the provinces, and yet even in the metropolis "in the successive periods since vaccination was introduced (beginning 1801-10) the fraction contributed by the disease to the total mortality has been reduced somewhat as follows: $\frac{1}{15}$th, $\frac{1}{40}$th, $\frac{1}{70}$th, $\frac{1}{90}$th, and $\frac{1}{110}$th. The important argument founded on the alteration of the age incidence of small-pox is next entered into, and it is shown how largely it was, in prevaccination times, a disease of childhood, while now, owing to infantile vaccination, the main incidence of the disease has been transferred to later periods of life. Lest this should be attributed to any cause other than vaccination, the argument is clinched by the citation of abundant evidence that in the present day small-pox among the unvaccinated still selects its victims principally from the earlier ages, this being observable in statistics belonging, not only to England and Wales, but also to Japan, the Netherlands, Brussels, and Budapest, and observable also whether the dividing age be taken as five years, ten years, or fifteen years. Continuing his argument, the author proceeds to show, from Dr. Barry's Sheffield report, that no such change of age incidence is to be seen in any of the other principal zymotic diseases. The next section of the article is entitled "Effects of Revaccination," and here the facts as to Prussia, our own army and navy, and the nurses in small-pox hospitals are dealt with. After discussing the modification of the disease by vaccination and the evidence of small-pox epidemics the author states his own conclusions regarding the duration of the protection of vaccination. One of these is that "resistance of the vaccinated to attack by small-pox outlasts resistance to revaccination or variolation." Susceptibility to the vaccinal operation returns comparatively soon after a primary vaccination. Gayton found that some 40 per cent. of vaccinated children could be revaccinated at the age of from six to ten years; but of vaccinated children of the same age exposed to the infection of small-pox by residence with cases of the disease less than 10 per cent. were attacked, though under the same exposure no less than 92 per cent. of unvaccinated children of the same age contracted the disease. Another important conclusion is that "resistance of the vaccinated to death by small-pox outlasts very considerably resistance to attack by small-pox." This is illustrated by a comparison of attack-rates under exposure and of fatality-rates among attacked persons in successive age periods from birth to 5 years upwards. Another conclusion is that "the drift towards acceptance of attack and of death by small-pox is much slower in course and much less in ultimate amount in the well vaccinated than in the badly vaccinated," and, finally, that "the rule that revaccination should be performed at ten to twelve years of age is not founded on any theory that primary vaccination has then lost its protective power." Dr. McVail holds that "the power of infantile vaccination against attack by small-pox remains to perhaps at least one half of its original extent at twenty years of age," and that "its power against death exists to a very considerable extent all through life, as abundantly shown by the statistics of the great small-pox hospitals."

Anti-vaccination is discussed in a few pages, and in a short article on chicken-pox the author urges that though some or most of the deaths registered from varicella may not be due to that disease there is no sufficient reason for believing that they are due to unrecognised variola. Varicella could only

be mistaken for the very mildest kind of small-pox; but even if the fatality of small-pox mistaken for chicken-pox be assumed to equal that of discrete small-pox recognised as such it would amount to only 1 per cent., so that "if we were to suppose that all deaths registered from chicken-pox were really due to small-pox we would have to argue that for every death there had been a hundred cases, and as the deaths registered from chicken-pox in the year 1890 were 95 we would be forced to conclude that in that year there had been 9500 cases of unrecognised small-pox, though in the same year only 16 deaths were registered from small-pox recognised as such."

We have thus given some general indications of the points covered by Dr. McVail's article, and we can only repeat that there is no statement on the subject of vaccination and small-pox which, in a comparatively small compass, gives anything like the same amount of trustworthy information, the whole being so compiled as to show that its author has taken every pains to study his subject thoroughly and to deal with it honestly and fairly.

JOURNALS AND REVIEWS.

The Quarterly Medical Journal for Yorkshire and Adjoining Counties. Sheffield: Rawson and Brailsford. Vol. II., Part II. January, 1894.—The most noteworthy articles in this number of a very readable periodical are: 1. A paper on Some Forms of Diarrhœa, by Dr. Lauder Brunton, having especial reference to "morning diarrhœa," which is ascribed in the main to an irritable sigmoid flexure which is unable to retain its contents in the normal manner. The paper is valuable for the practical suggestions it contains. 2. An account of the Outbreak of Cholera at Rotherham, by Dr. Alfred Robinson, medical officer of health of that town. The text of a report by Dr. Sims Woodhead on two of the cases is given, together with drawings of the bacilli. 3. The record of a well-marked case of Acromegaly, by Dr. Dyson of Sheffield. There are also several other articles of interest, two being records of Hyperpyrexia in Influenza and Acute Rheumatism respectively. There is a good selection of abstracts of recent literature.

The Liverpool Medico-Chirurgical Journal. No. 26. January, 1894.—We have already had occasion to notice two of the papers in this review—viz., those of Dr. Glynn and Dr. Barr. Dr. Hugh Jones and Mr. Herbert Davies write on the Excessive Infant Mortality in Liverpool and its Prevention. One of the most striking points brought out is the connexion between deaths from infant suffocation (overlying) and drunkenness. The authors do not think that child insurance has any such relationship to child mortality as is alleged, but state that "the ideal insurance system would be endowment insurance, by which the life of an infant, and not its death, is a source of profit." Their chief means of preventing infant mortality are the better education of the mothers in their duties to their offspring and the inculcation of a higher sense of responsibility amongst them; the regulation of day nurseries; and the extension of the provisions of the Prevention of Cruelty to Children Act to such matters as overlying, drugging by opiates, &c. Dr. Campbell of Rainhill gives an account of a case of Thrombosis of the Left Inferior Cerebellar Artery with Lesion of the Spinal Cord. Mr. Damer Harrisson relates a case of successful operation for Malposition of the Testes and Double Congenital Hernia. The case is of especial interest as both testes were undescended and the operation involved the formation of a scrotum. There is an interesting discourse on Tubercle and Tuberculosis of Human Skin, by Dr. Leslie Roberts; and a richly illustrated contribution in Tubercular Diseases of the Vertebral Column, one of a series of papers on Practical Surgery, by Dr. Wm. Alexander.

The Practitioner. Vol. LII. No. 2. February, 1894. London: Macmillan and Co.—Dr. G. A. Sutherland contributes an article on Scurvy in Children, in which he endorses the opinions arrived at originally by Drs. Cheadle and T. Barlow, whilst at the same time he gives the results of his own experience, which appears to have been large. There can, we think, be no doubt as to the occurrence of scurvy in the young, and its frequent association with rickets. Dr. Lauder Brunton writes in his customary lucid style upon Headaches, pointing out the frequency of their dependence upon ocular defects. His paper is, however, mainly intended to testify to the value in nervous headache of bromide of potassium and salicylate of sodium in large doses. Dr. A. Ravogli concludes, after a brief consideration of the subject, that eczema is due to pyogenic micro-organisms, "developed upon a previous inflammation of the skin."

The American Journal of the Medical Sciences. No. 262. February, 1894. Philadelphia: Lea Bros. and Co.—Perhaps the most important of the varied contents of this high-class journal is the Contribution to our Knowledge of Epidemic Cerebro-Spinal Meningitis, by Drs. Flexner and Barlow of the Johns Hopkins University. Their material was derived from an outbreak of this remarkable disease in Maryland during the winter and spring of 1893, especially at Lomaconing, a mining centre in the Alleghanies. The town would appear to be extremely insanitary, but the connexion of the outbreak with such conditions cannot be traced. The epidemic attained its maximum during the coldest weather. The authors give a history of the subject, and especially of its bacteriology, and also give full details of two post-mortem examinations they were enabled to make. They confirm Eberth's discovery of the diplococcus lanceolatus in these cases. This number of the journal also contains the conclusion of Dr. Klein's paper on cases of Brain Tumour; a brief practical study of Ascites in Nutmeg Liver, by Dr. Bristowe; a paper on Toxæmia of Pregnancy, by the editor, Dr. E. P. Davis; and a suggestive study on Vaso-motor Ataxia, by Dr. Solis-Cohen.

The Dublin Journal of Medical Science. Third Series, No. 266. February, 1894. Dublin: Fannin and Co.—The leading feature of this journal is the variety of its departments. Each month there appear in its pages sanitary and meteorological notes, reports of proceedings of societies, accounts of progress in various departments of medicine, reviews of new books, and some original communications. The three articles which come under this last heading in the present number all deal with abdominal affections. Mr. McArdle writes upon the Operative Treatment of such Herniæ as appear to be the Result of Congenital Defect of the Linea Alba or as the Outcome of Laparotomy, a title sufficiently explanatory of the contents of the article. Dr. A. J. Smith describes an interesting case of Colectomy for Adhesion of Cæcum to old Ovarian Pedicle and Tubercular Appendix. Dr. H. C. Tweedy writes upon Dilatation of the Stomach with Enteroptosis, a condition to which Glenard first drew attention, but which has not been much dealt with by English writers.

The Indian Medico-Chirurgical Review. Edited by N. H. CHOKSY. Vol. II., No. 1. January, 1894. London: Baillière, Tindall, and Cox. Bombay: N. K. Rao and Co.—This is the first number of the second year's issue of a journal conducted and contributed to by medical men of Indian nationality. It opens with the presidential address delivered at the annual meeting of the Grant College Medical Society by Mr. R. N. Khory, M.R.C.P., in which, after reviewing the merits of the society, he spoke at length of the opium question, and said that the effect of the habitual use of this drug has been exaggerated. Another paper is on the subject of Milk, by Dr. Colah. There are several editorial articles, and also a report of a deputation to Mr. Naoroji, M.P., upon the subject of Medical Reform in India. It appears to be a journal of high-class and excellent ethics.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 24, 1894.

IT has often been asked, why is Italy so poor in fiction that a person might count on the fingers of his hands, and have some to spare, the really worthy counterparts she can show to the *chefs-d'œuvre* of a SCOTT or a BALZAC, a VICTOR HUGO or a GEORGE ELIOT, a FENIMORE COOPER or a TOLSTOI? Even for her musical drama, in which she has been a productive force, she has had to draw upon other literatures for the *libretto* or story—SCOTT supplying the theme of her "Lucia di Lammermoor" or "Puritani," as VICTOR HUGO furnishes that of her "Lucrezia Borgia" or "Ruy Blas." That Italy can produce a historical romance of the first order is proved by the "Promessi Sposi" of MANZONI, and even by the works of some of his many imitators, such as the "Margherita Pusterlà" of CESARE CANTÙ, or the "Ettore Fieramosca" of MASSIMO D'AZEGLIO. But even in this field her output is scanty, while in that of the novel of real life it is distinctly a "quantité négligeable." The phenomenon is an interesting one and seemingly inexplicable till we look a little more closely into her social record. There we find in the village *vendetta*, in the criminal developments of her great towns like the "Camorra" or the "Mala Vita," a wealth of dramatic incident, a surplusage of thrilling situations and startling *dénouements* before which the inventions of the romancist or novel-writer are insipid and tame. Glance through any daily journal of the kingdom, from Milan to Palermo, from Venice to Naples, and contrast with the *feuilleton* [or story that accompanies it] the police news or the "sacco nero" that fills the body of the paper, and it is perceived at once that in the incidents of this or that brigand adventure or family feud or domestic tragedy there is such picturesque material, such elements of surprise, explosions of passion so unexpected, revelations of humanity in its fiercest or foulest aspects so striking, as far to transcend the "regulation business" of the steady-going novel-writer. In a word, literary invention is outdone by realistic detail. Fiction is beaten off the field by fact.

If, however, Italy is inferior in the literature of romance or invented story to other nationalities she has her advantage in other walks—pre-eminently in that for which her sombre domestic annals provide such opportunities—the analysis and etiology of crime. In this she is the parent of a powerful and rapidly developing school, which is gaining adherents throughout the civilised world and forcing its claims on the attention and even on the official acknowledgment of public men and statesmen. Just as anthropology gradually won its way to recognition till at scientific and medical congresses, especially those held in foreign countries, it has a "section" all to itself, so its first-born issue, "criminal anthropology," has asserted its right to a place in every association which has for its object the discussion and classification of felony and its perpetrators. Of this new science incomparably the ablest and most accomplished representative is CESARE LOMBROSO, a man of genius with all the "defects of his qualities," but with endowments of an analytic and constructive kind and with powers of exposition and eloquent vindication which quite account for the commanding place he fills in the medico-psychological world. A pupil of the great PANIZZA, and afterwards of SKODA, he had a thorough physiological and clinical training at Pavia and Vienna, and almost immediately after graduation he threw himself with ardour into the field he has made his own. True, he had precursors, of whom the greatest, perhaps, was LEGRANDE DU SAULLE of Paris, whose *chef-d'œuvre* crowned by the Institute, "La Folie devant les Tribunaux," marked an epoch in the analysis and etiology of crime, and whose post as medico-psychological expert at the Civil Tribunal of the Seine gave him an insight into the causes and correctives of criminality quite unique. But that sagacious physician addressed a languid and unsympathising generation, and left his peculiar theme to be dealt with and pushed to the front by other hands. His true successor and vindicator is LOMBROSO, who from his chair of Legal Medicine in Turin sends forth year by year enthusiastic disciples to carry his tenets throughout the peninsula and beyond the Alps till not a school of any account in Europe can either afford or affect to ignore the propaganda.

As has been announced in THE LANCET,[1] one of the most interesting and animated sections of the International Medical Congress, which will meet on March 29th, will be that in which Criminal Anthropology is set down for treatment by Professor LOMBROSO, just as one of the most fascinating "annexes" of the "Esposizione d'Igiene e Prodotti Medicinali" will be that due to LOMBROSO's initiative—the Museum of Crime and its Instruments. For both these departments of the programme—the discussion in the section and its illustration in the museum—an excellent preparative has appeared in a recently issued volume.[2] Made up of contributions from the recent *causes célèbres* of the Italian law courts, it is the work of experts in psychiatry, such as A. G. BIANCHI, GUGLIELMO FERRERO, and SCIPIO SIGHELE, all of them collaborators with LOMBROSO, under whose auspices the book is launched on the world. It is, as the authors announce, the first of a series devoted to the study of crime on its anthropological side, and it consists of six parts, thus distributed or classified: (1) The crimes or pseudo-crimes of love; (2) man's pursuit of his fellow and the scramble for gold in civilised countries; (3) the delinquent soldier; (4) moribund brigandage; (5) the violent and fraudulent malefactor in the Romagna; and (6) the assassin. Under each of these heads one or more typical illustrations are given, taken, as have been said, from recent criminal trials, the incidents being arranged and set forth with consummate skill, and each of them forming an object-lesson in the dependence of crime on organisation. Fiction itself pales before these narratives, the dramatic impressiveness of which would be almost too thrilling were it not for their steady subordination to the science they are made to illustrate or confirm. "Pleasant reading" they cannot be called, nor indeed are they intended to be, the "hyena in human

[1] THE LANCET, Feb. 3rd.

[2] Il Mondo Criminale Italiano. Con una Prefazione del Professore Cesare Lombroso. Terzo Migliaio. (The Italian Criminal World. With a Preface by Professor Cesar Lombroso. Third Thousand.) Milano: L. Omodei Zorini. 1893.

shape" and his characteristic deeds of cruelty and cunning being at no time an attractive subject of contemplation. But the professional class whom they are indirectly meant to instruct—at whom both narrative and scientific commentary are "levelled," so to speak—is that of the criminal lawyers, whose jealousy of the encroachments of anthropology on the domains of precedent or legal enactment is as strong in countries where felony is rampant as in those where it is comparatively rare. According to LOMBROSO and his coadjutors, if these lawyers had their way, "judicial murder" would be one of the commonest of crimes, and they deem it to be fortunate for Italy that the doctrine of BECCARIA has finally found its way into the statute-book, and that the abolition of capital punishment has at last made "judicial murder" impossible. Even as it is, the prison and the galleys are in far too great a percentage of cases meted out to delinquents whose defective organisation has from early youth indicated for them the lunatic asylum or the medico-psychological reformatory. If State education did its duty — such is still the contention of LOMBROSO and his school—the physiologically incapacitated members of society might be taken in hand, and from the morbid or criminal groove in which they were constituted to run might in good time be deflected into another and healthier channel. Everything, according to this hopeful teaching, is possible if an early and well-inspired beginning is made; and certainly the instances adduced—in which craniological formation, often the result of defective nutrition or accident, and therefore capable of readjustment, has through negligence been allowed to develop into the criminal type—are eloquent in the argument they enforce, the treatment they suggest, and the results they promise. At no time more than the present is such doctrine so worthy of respectful hearing, and civil governments will one day find their account in giving better heed to criminal anthropology—even with its occasional exaggerations—than they have hitherto shown a disposition to bestow.

THE investigations of Dr. FILANDREW VICENTINI of Chieti, Italy, on the cryptogamic flora of the mouth formed the subject of an interesting paper read before the Odontological Society by Mr. HOWARD MUMMERY. Dr. VICENTINI claims to have discovered a new form of micro-organism in the mouth, which he calls "leptothrix racemosa." This organism he describes as being a very highly specialised one, resembling in its mode of reproduction the algæ. There is a good deal of misconception as to the real significance of the term "leptothrix," which, however, is now usually restricted to the forms of micro-organisms which occur in the mouth as long, thin threads, which show no divisions or articulations, and which are not coloured violet by iodine and acids. Very little is known with any certainty of the biology of the leptothrix forms in the mouth; they resist all attempts at cultivation on artificial media. If a scraping from the fur which forms upon the teeth is examined under a microscope a matted collection of organisms is found, chiefly made up of masses of interlacing filaments, enclosing in their meshes numerous micrococci and bacteria. To this thread form, which is unjointed and does not yield a violet colour with acids and iodine, Dr. MILLER has given the name of "leptothrix innominata"; the micrococci entangled in the meshes he does not consider to have any genetic connexion with the threads, although they were formerly regarded as its spores. These threads and granules take a yellow colour with iodine and acids, but have no violet reaction. The long chains of bacilli which do show a violet colour with iodine the same writer calls bacillus buccalis maximus, and the chains of micrococci which also show the same colour he names iodococcus magnus. Other straight or curved filaments, much resembling the bacillus buccalis maximus, but showing no violet reaction with the acid iodine, he calls leptothrix buccalis maxima, but whether this is a distinct organism he is as yet unable to determine. Dr. VICENTINI proposes to change the name leptothrix buccalis, including those mentioned above, to "leptothrix racemosa," in order to indicate its fructification. This fructification, or sporulation, is only found in the upper layers of the leptothrix masses, whilst the old filaments of the same organism occupy, according to him, the deeper layers and constitute what has been formerly described generally leptothrix buccalis. He advises that the outer surface of the white deposit upon the teeth should be very gently scraped with a needle, and a minute portion, about the size of a quarter of a millet seed, be placed upon a glass slip, with a drop of a weak solution of lactic acid. This should be done in the morning, fasting, before there has been any abrasion of the surface by tooth-brush or food. The preparation should then be teased out with needles upon the slide, adding to it a drop of a solution of iodine; the cover glass should then be applied and gently compressed so as to thin out the preparation and it should be left to stain for about fifteen minutes. It is necessary to use a $\frac{1}{75}$ immersion lens to see the appearances he describes as resembling bunches of grapes. Dr. VICENTINI speaks of this as consisting (1) of the fertile filament or central stem with reserve gemmules inside; (2) the peduncles or sterigmata, arranged in six longitudinal rows; (3) the sporules; and (4) a gelatinous protective envelope. He says that the sterigmata or threads by which the sporules are implanted on the outside of the central stem cannot be seen with a lower power than a $\frac{1}{75}$. He describes other structures such as the adult male organs, which can be studied with lower powers, and a younger condition of these male organs (antherids or spermagones), which are very minute. These, he says, are best treated with aniline water and an aniline dye, without washing the preparation.

Mr. MUMMERY, after two unsuccessful attempts, was able to detect appearances very similar to those organs which Dr. VICENTINI compares to bunches of grapes. The regular lines of rounded bodies, which Dr. VICENTINI considers to be spores, were plainly seen, and also the central stem, but Mr. MUMMERY was unable to see the minute peduncles by which the spores are said to be attached to the central stem or anything corresponding to the two forms of the male organs. Dr. VICENTINI considers that the forms of micro-organisms hitherto known in the mouth consist either of the inferior phases of this one organism, the leptothrix racemosa (which may be present in either the filiform state, the dissociated state, or the zoogloeic state); or, secondly, of the sporules detached from the female filaments (the grape bunches); or, lastly, they consist of the male elements, the antherozoids detached from the adult male organs, and freely swimming in the fluids of

the mouth. To the first group—the inferior phases of the leptothrix racemosa—he refers the filamentous forms usually called leptothrix, the bacilli and the bacteria, as well as vibrio spirillum and spirochæte; to the second group (the detached sporules of the female filaments) he ascribes the micrococci found in the mouth; and to the third group (the detached male elements) he ascribes the comma-shaped bacilli and some other forms. He finds this same organism, the leptothrix racemosa, in the sputum of whooping-cough and other diseases, and goes so far as to consider several of the pathogenic bacteria, such as the tubercle bacillus, the pneumococcus, and the gonococcus, as derivations of the same micro-organism, and he traces various transition forms. These statements Mr. MUMMERY finds very revolutionary, and the position seems to be a very untenable one; yet some eminent bacteriologists have from time to time promulgated somewhat similar views—for instance, NÄGELI and BUCHNER, who held that the species of bacteria are not fixed, but are affected by variations in external conditions. Dr. VICENTINI'S views differ, however, from those of NÄGELI and BUCHNER in that he derives the different organisms of the mouth from different phases and portions of one parent organism. As Dr. MILLER points out, it seems very extraordinary if the many different pathogenic actions of the bacteria of the mouth are all derived from one single form: for instance, "a pure culture of the micrococcus of sputum septicæmin, one or two days old, will invariably kill a mouse or rabbit; a pure culture of some other bacterium from the same mouth, under exactly the same conditions, may have no action at all." Mr. MUMMERY thinks that it is quite possible that as the study and knowledge of these lower fungi advance, and the whole life histories of particular organisms are more carefully worked out, it may be found that some of these organisms are only phases in the life history of a more complex one, as suggested by Dr. VICENTINI; but it must seem to the majority of observers very improbable that so many distinct forms, differing not only in appearance but in vital action, should arise from one parent form only.

THREE of the great poets of antiquity, HESIOD and PINDAR and HORACE, have sung in divers strains of islands in the western ocean where human suffering was unknown and where the golden hours on angel wings circled through years of perpetual summer. Stripped of their poetical accessories, these islands have yet their place in modern experience, for on their shores the "world's tired denizen" can settle, and recruit body and mind under conditions of light and air and warmth denied to him in so-called temperate climes. Their restorative virtues are, indeed, among the most prized resources of latter-day therapeutics; but they demand in the practitioner who prescribes them a knowledge and a circumspection and a judgment not less thorough and accurate and sagacious than are required by complex additions to the pharmacopœia. Change of air and climate are thought to be prescriptions within everybody's competence, and, in fact, there is no side of practice in which there is a greater tendency for the layman to become "his own doctor"; but the results are often as disastrous as the unskilled administration of drugs or recourse to "mineral waters" at the prompting of a tourist's guide. To recommend a patient to "winter abroad" is as responsible and difficult a detail of practice as any within the physician's province.

The series of articles on Madeira recently concluded in our columns have been designed to assist the physician in deciding whether the climate and other conditions of life on the island are such as would conduce to the benefit of any particular patient, and it is hoped that the fresh light they throw on the virtues and the shortcomings of this well-known health resort will be of practical service. Progress in our capacity for estimating the value of such places is indeed as real and as striking as in any other walk of medicine. Year by year our knowledge of the special claims of climate is extending, deepening, and refining, and in the same proportion the reliance with which the indications, *pro* or *contra*, can be acted on increases, and the patient's benefit is secured. Formerly it was enough for a place to be a subtropical island, with a moderate rainfall, mild winds, and European comforts, to make it the resort of invalids whose condition required change, warmth, and sea-air, and the hotels and *pensions* and bungalows of the Canary group, or of Madeira itself, were frequented accordingly. Experience aided by science, however, has wrought a beneficent innovation on this promiscuous practice, and the series of articles now brought to a close will, we hope, enable the professional reader to obtain a perception of the class of patients for whom Madeira is suited, as well as of the kind of patients on whom the island might be expected to expend its resources in vain. Bronchitic or laryngeal affections, particularly in neurotic subjects, are peculiarly benefited by a sojourn in Madeira, while convalescence from exhausting or acute disease, such as scarlet fever, is likewise promoted under its conditions—conditions insular, indeed, but favouring continuous open air-life. Similarly malarial cachexia may be "lived down" in the island, and neurasthenia, especially as the result of blood deterioration, seldom fails to derive benefit from the climate. The response of the system to the kindly influences of sunlight—constituting, with the sea-breeze and the warmth, a species of atmospheric "bath"—is indeed remarkable and only to be appreciated adequately when these influences are withdrawn. But it is in phthisis of the early stages, accompanied with hæmoptysis—phthisis for which a slight degree of humidity and the absence of dust and irritating winds are indicated—that Madeira achieves its happiest results. On the other hand, atonic phthisis, with pyrexia, however slight, patchy softening, and vomicæ, had better be treated elsewhere, and the same must be said of catarrhal maladies involving the alimentary tract. Renal affections and albuminuria, particularly if chronic, do well in the island, whose "aerial conditions tend to keep the skin in physiological exercise and thus to relieve the blood-pressure." This is a therapeutic fact not so well known as it ought to be, but quite intelligible to all who appreciate the meteorological advantages of Madeira. Among these the sunlight, even more than the sun warmth, is an all-important factor, quickening, as it does, the physio-chemical processes of the circulation.

The other circumstances that enhance the benefit of a sojourn in Madeira are the sanitation of the island, the hotel

comforts, the "vicarious progression" on horseback or in palanquin, and the facilities for exploring the attractive spots within its circumference. In every one of these particulars the improvement has of late years been immense. Add to this the good steamboat service and postal communication with the British Isles—"just near enough to escape anxiety, while distant enough to dodge worry"—and the attractions of Madeira for the invalid, or the healthy, while over-wrought, professional man, will be recognised as very obvious. On the other hand, we trust that the Portuguese Government and the local authorities will take note of, and carry out, the suggestions with regard to certain matters of sanitation and public health which were advanced in our articles.

Annotations.

"Ne quid nimis."

AN IMPERIAL "BRITISH PHARMACOPŒIA."

AN interesting paper on the above subject was lately read by Professor Attfield, F.R.S., before the Pharmaceutical Society. He was careful to observe that, although it was written entirely in his private capacity, it had been prepared with a due sense of the responsibility involved by his position as the appointed editor of the next Pharmacopœia. It will be remembered that at recent meetings of the General Medical Council the question of extending the sphere of usefulness of the Pharmacopœia has been discussed Profesor Attfield wishes to acquaint pharmacists and others in Great Britain, Ireland, the colonies, and India with the nature of some of the proposed alterations. To encourage them to work at pharmaceutical researches he showed how largely their labours had assisted the editors of former Pharmacopœias, and, lastly, he invoked the aid of chemical, botanical, and pharmaceutical friends, both at home and abroad, in the arduous editorial labour connected with the proposed alteration of scope. It is scarcely necessary to summarise here the history of past Pharmacopœias, or to indicate the very numerous instances in which the results of pharmaceutical research work have improved upon previous statements. The question for the future is the changes which are necessary to better adapt the Pharmacopœia to Colonial requirements, or, in other words, to the requirements of all the more distant portions of the British Empire, and suggestions are accordingly invited from all parts, though, as in previous editions, such suggestions must remain subject absolutely to the controlling voice of the General Medical Council and the Pharmacopœia Committee. Professor Attfield had much to say upon nomenclature, and we are glad to note that he is averse to mere pedantic alterations. He is, however, in favour of facilitating the employment of the metric decimal system, and he suggests that, as a student's handbook, the value might be increased by the inclusion of explanations of tests. To edit an Imperial Pharmacopœia single-handed seems a task of great magnitude, but Professor Attfield has already shown in his reports to the General Medical Council that he possesses a keen appreciation of the progress of pharmaceutical study, and the frankness with which he invites coöperation will, we trust, meet with a ready response.

HERBALISTS AND THE APOTHECARIES ACT.

AT the Keighley County Court on the 14th inst., before his Honour Judge Gates, Q.C., and a jury, a herbalist, Mr. Newton, who is also a chemist and a town councillor, at the instance of that useful association—the Medical Defence Union—acting on behalf of the Apothecaries' Society, was convicted in two cases of acting as an apothecary. One was a case of scarlet fever. He did not order the child to bed but allowed it to be dressed. Mr. Newton being ill he sent his assistant, who said there was nothing serious the matter with the child. The parents, becoming anxious, called in a medical man, and a message was sent to the herbalist requesting him not to call again. He sent in a bill for £1 5*s.* 6*d.*, charges for eight visits at 2*s.* each, besides medicine. Dr. Showell Rogers of Birmingham represented the society, and quoted Mr. Justice Cresswell's definition of an apothecary in the case of the Apothecaries' Company *v.* Lotinga (1843): "I apprehend that an apothecary is a person who professes to judge of internal deseases by their symptoms and applies himself to cure such diseases by medicines." Mr. Walter Beverley defended the herbalist, relying on an Act passed in 1542. The defendant claimed that he could visit as a herbalist under the Act of Henry VIII. He not only visited, but he notified the case. Looking over the defendant's book, the judge found that his practice had been most general, including cases of typhoid fever and scarlet fever. Dr. Showell Rogers said that, however important the case was for the defendant, it was also very important for the medical profession, for the public, and especially for the poor, who could not protect themselves. The jury, after a short retirement, found for the plaintiffs, and his Honour gave judgment for £20 and costs. In a second case—the society declining to withdraw it as Mr. Beverley wished—he accepted judgment without having the jury sworn, and his Honour gave judgment for £20 without costs. We congratulate the Apothecaries' Society on a most wholesome use of their legal powers, and the Medical Defence Union on their efficient agency in this matter. It is monstrous in these days of exacting medical education that herbalists should assume the airs and give the certificates of duly qualified medical men, and it is still more so when a man in Mr. Newton's position gives the sanction of his example to such practices.

BACCELLI AND HAECKEL.

IT is well known that at the coming congress the German representatives will outnumber those of all the non-Italian nationalities, and that the Teutonic element will equally predominate in the programme of proceedings. This result will surprise no one who has witnessed the *rapprochement* between Italy and the great central European power. No opportunity, indeed, of drawing closer is missed on either side, and, whether it be a death or a jubilee, the departure of a Billroth or the celebration of a Schiff's seventieth anniversary, the accession of a Baccelli to office or the demise of a Sperino, the interchange of sympathy, now of congratulation and now of condolence, is as prompt as it is genuine. Considering the previous antagonism of the two nationalities, all this is as it should be, and certainly Italy owes not a little of her recent development in every walk of science to the life-giving touch of a vigorous, while alien, civilisation. Probably no German biologist is so popular in her schools as is the Professor of Zoology and Comparative Anatomy in the University of Jena, Ernst Heinrich Haeckel, whose uncompromising evolutionary spirit finds peculiar favour in all Italian seats of learning. In his case it was quite enough to have attained, not his seventieth, but (as is the fact) his sixtieth year for young Italy to send him her formal congratulations. In honour of that event a marble bust of the professor, designed to occupy an honoured niche in the Jena school, has been ordered from a capable sculptor, and towards its defrayal some forty Roman admirers have joined their subscriptions to those from Germany and other countries. Concurrently with this step Dr. Francesco Gasco, Professor of Comparative Anatomy in the University of Rome, gave an eloquent *résumé* of Professor Haeckel's contributions to science,

and, more significant still, Dr. Baccelli, Professor Gasco's colleague, who holds the chair of Clinical Medicine, sent the following telegram to the biologist of Jena: "Illustre prof. Ernesto Haekel, L'Italia, che voi tanto amate, partecipa alle onoranze che le nazioni civili gareggiano nel tributarvi nel vostro 60° genetliaco. A nome delle Università italiane, che tanto vi amano ed ammirano per le opere vostre immortali, vi mando le più cordiali congratulazioni ed auguri di lunga e prospera esistenza" (Illustrious Professor Ernst Haeckel: Italy, whom you so greatly love, participates in the honours which all civilised peoples vie with each other in vouchsafing you on your sixtieth birthday. In the name of the talian universities, who so greatly love and admire you for your immortal works, I send you the heartiest congratulations and anticipate for you a long and successful career). Professor Haeckel, for whose many-sided culture Rome has a natural fascination, is a frequent pilgrim to the Eternal City and on each visit has treated the medical undergraduates to a survey of the biological sciences and to a forecast of their future. On these occasions his host and prompter is invariably Dr. Baccelli, who, successful in most undertakings, has certainly succeeded in this—in making Italy and Germany sink their former political variance in a scientific reciprocity of which the fruits, already conspicuous, will be prominently *en évidence* during the sittings of the nineteen sections of the coming International Congress.

A SAFETY OIL-LAMP.

SEVERAL important improvements in the construction of oil-lamps have been made during the last few years, consequent on the deplorable accidents that have arisen from the increasing employment of oil of a more or less volatile kind for lighting purposes. It will be remembered that a committee of experts was appointed not long ago to inquire into the probable cause of lamp explosions with the view of laying down rules to provide as far as possible against risks of this kind, and, after careful investigation, a report was issued which contained some valuable general information on the subject, together with certain recommendations, which if only acted upon would doubtless greatly reduce the number of accidents of this class. A modification in the method of feeding the wick from the reservoir has been planned by Mr. J. R. Howarth, which, as far as we have been able to judge from a lamp submitted to us, promises to remove all risk of explosion and thus to solve a difficulty which has long deterred many from using oil as an illuminating agent. The invention consists in charging the reservoir, not with liquid oil, but with a porous material of peculiar absorbent powers (a felt-like substance) previously placed in contact with the oil, which it rapidly appropriates. The point of the invention is that the reservoir, being filled with an absorbent material, which may be regarded as a fine gauze, contains no air space, or space above which would otherwise be occupied by inflammable vapour or an explosive mixture of vapour and air. The capacity of the reservoir is of course slightly reduced, but it is stated that the porous material yields its store of oil to the wick to the last drop. The material in the reservoir may be re-charged by means of a tube running through the lamp from the pedestal upwards. Adopting this device, it is possible, it is claimed, to burn the highly inflammable oil benzoline without any risk, while at the same time the advantage of the superior illuminating power of this hydrocarbon is gained. The inventor states that a lighted lamp may be knocked over or even rolled along the floor without danger, as while the absorbent gives up its oil readily to the wick, it does not part with it by oozing as in the case of a sponge. It occurs to us that the principle upon which the safe working of this device depends is precisely similar to that of a well-known form of oxyhydrogen blowpipe, in which a mixture of oxygen and hydrogen, which of course is highly explosive, is burned. In this blowpipe the mixed gases are passed through a tube packed with wire gauze before reaching the jet; in case the flame should travel back it is thus cooled by passing through the gauze, and does not cause an explosion of the mixed gases in the reservoir. It would appear, therefore, that Mr. Howarth has discovered a probably valuable application of a well-known phenomenon, but we are not disposed to give a definite and precise opinion on the merits of this invention until, at the hands of experts, it has passed successfully through a severe set of practical trials; for it is obvious that absolutely convincing proof of the advantages claimed should be obtained before an invention of this kind can be safely placed in the hands of the public. As far as we have been able to determine we are satisfied that the claims of the inventor are fairly stated, and there is some reason to hope that his discovery may eventually lead to the solution of the question as to how oil can be burned with absolute safety. In view of the fatalities from lamp explosions which have occurred, and which, according to recent reports, appear to diminish but little, he who solves this problem should earn the lasting gratitude of the community.

DEATHS FROM WINDOW CLEANING.

ANOTHER death from injuries received while cleaning windows, this time at Brixton, will serve to intensify the feeling, already strong, that some remedy for this great risk must be found. A servant girl was cleaning the windows of the front bedroom on the second floor, when she missed her footing and fell on the railings beneath, sustaining terrible injuries, which she survived only half an hour. Mr. Pridgin Teale, in a recent lecture to the Society of Arts on the Way to Keep out Dust and Let in Fresh Air, published in the Journal of the Society of Feb. 5th, suggests that amongst other requirements in a good window it should be so made as to permit of being cleaned by a person standing inside the room, whereby the risk and expense of cleaning from without are avoided. This, as we have frequently pointed out, involves the abandonment of the sash window and the adoption of one so divided that one-half vertically, or in large windows one-third, may open inwards on hinges, the other half or two-thirds being fixed and wind-tight, the breadth of each division to be such that a servant's arm can reach out and clean the outer side of the fixed window as she stands inside the room.

REMOVAL OF THE GASSERIAN GANGLION.

IT seems still to be a disputed point whether or not the Gasserian ganglion can be removed. So far as we are able to judge, there is nothing that can be regarded as absolute proof that more than a small part of it has been removed in cases of severe neuralgia in which the nerve has been attacked so near its origin; but whether it is removed or not is a matter more of theoretical than of practical interest so long as the cases which are operated upon are relieved of the pain which renders their lives a burden. The operation designed and most skilfully carried out by Mr. William Rose is familiar to our readers. It formed the subject of the third of his Lettsomian lectures two years ago, which was reported in full in our columns. Mr. Rose's operation consists in exposing the outer surface of the foramen ovale and applying the trephine to this part of the wing of the sphenoid and so exposing and then removing the anterior and outer part of the Gasserian ganglion. His operations have been attended with a very gratifying amount of success. It is a severe procedure and not unattended with difficulty. Other ways of reaching the ganglion have been suggested, notably Mr. Victor Horsley's. A very useful modification of the operation has been introduced by an American surgeon,

Mr. Hartley, which he described, together with a case on which he operated. Briefly it may be stated as consisting in reflecting the tissues, including the bone, over the temple, the base of the initial curved incision being over the zygoma, and the flap being reflected downwards. Broad retractors are used to raise the dura mater with the brain, the foramen rotundum and foramen ovale are exposed, the nerves are traced back to the ganglion, and it and the nerves between it and the foramina are excised. Dr. Tiffany of Baltimore, in a recent number of the *Annals of Surgery*, calls attention to the method and gives particulars of four cases operated upon by it. His cases all did well, apparently: of the four, three have since been observed. In one of the cases, seen thirteen months after operation, there was no return of pain, nor was there any pain in the other two, in which, however, only a few months had elapsed since operation. The fourth patient was not seen after he had left the hospital. In the three cases examined it is interesting to find that the persistently anæsthetic areas were very similar. There was a large area round the mouth and over the face and the lower part of the nose, and another smaller area in the temporal region. Taste was normal in all three cases; a little discomfort was caused by the food lodging between the gum and cheek, a result apparently of the division of the motor branch of the fifth. It may be mentioned that in all these cases the superior branch of the fifth was left alone, and no trophic troubles, ocular or of any other kind, ensued. It is yet too early to be certain that the pain will not return. It is to be hoped that it will not, but, as is well known, even a year of freedom is no guarantee in such cases of an absolute cure.

THE NECROPSY ON MARTIAL BOURDIN.

IN view of the medico-legal interest attaching to deaths from explosives, we publish a succinct account of the chief features which were noticed at the post-mortem examination on the body of the man who was removed to the Seamen's Hospital after the explosion in Greenwich Park. He was a short man, about 5 ft. 1 in. or 5 ft. 2 in. in height, delicate in features and general appearance, with a small hand and small limbs, a thin, fair moustache, and light hair, from two to three inches long, parted in the middle and brushed straight back. His left hand and wrist were entirely blown away, and the tendons of the wrist and fingers were exposed for varying lengths, the longer tendons being on the extensor aspect. No damage was done to the right hand, but sundry black points—none larger than a pin's head—could be seen, especially on its radial aspect. A nearly circular opening into the abdomen was seen immediately to the right and slightly above the umbilicus. It was about one inch and a half in diameter, with a black, charred circumferential margin. A posterior opening was visible just below the right last rib, through the quadratus lumborum muscle, almost linear in character, except towards the spine, where it was a little more oval. It was through this wound that the pieces of the metal bomb found before an internal examination had been made had passed. On the left thigh and leg were seen numerous charred wounds, varying from one-third of an inch to an inch in length, and some of these were found to be quite superficial and others to extend more deeply. Just below the right hip-joint, in front, a deep wound passed down almost to the femur and in close proximity to the femoral vessels; another on the outer side, about an inch below the great trochanter, also ran deeply, and in this a large piece of metal was found. One or more smaller pieces of metal were found in the other wounds; but generally small pieces of clothing were the only foreign bodies obtained from them. On the left side there were superficial burns in the front of Scarpa's triangle and on the outer side of the shoulder. On opening the abdomen some intra-peritoneal hæmorrhage was at once seen. This was due to great contusion and laceration of the right lobes of the liver, especially of the quadrate lobe and the adjacent part of the right lobes The gall-bladder had escaped injury. None of the intestines at this stage appeared to have been damaged, but on the removal of the peritoneum it was at once found that there was a large amount of retro-peritoneal hæmorrhage. Careful examination showed that the second part of the duodenum had been ruptured on the right side for rather more than an inch, and that the anterior surface of the right kidney was extensively lacerated. All the other abdominal viscera, including the stomach, which contained food, and the other portions of the intestine, were uninjured. The thoracic viscera and brain were quite normal. All the viscera were remarkable for their small size. The bomb was probably held in the left hand, which had been placed a little above and to the right of the umbilicus, and, whilst the injuries to the left thigh were produced by a downward direction of the explosive current, the main force passed upwards and slightly obliquely to the left, missing the spinal column and the anterior spinal muscles and the large vessels. The injuries to the liver were certainly due rather to the velocity of the air surrounding the bomb than to the metal itself; for it is only in this manner that the large contusion can be explained. The anterior surface of the right kidney may have been damaged in a like manner, but probably the injury to the duodenum was caused in the passage of the metal through the abdominal cavity. It is remarkable how little damage was produced by the bomb, and this can only be explained by its being so near to the body when it exploded, and so affording very little space for the scattering of its contents.

CEREBELLAR LESION AND DEGENERATION OF THE SPINAL CORD.

IN the January number of the *Liverpool Medical Journal* Dr. Alfred W. Campbell records a very important and interesting case of thrombosis in the left inferior cerebellar artery. The patient was a woman aged sixty-two years, who suddenly became giddy and fell off the chair on which she was sitting quietly knitting. There was apparently no loss of consciousness, but she experienced considerable weakness in the limbs, especially those of the left side, on attempting to rise, and she subsequently suffered from a severe attack of vomiting and headache. Three days later the left side was completely paralysed, and she talked foolishly. She became maniacal later, but the mental symptoms disappeared in a few days, the power in her limbs returned, and within four months of her attack she was able to take a five-mile walk. The only pain she experienced was occasional headache, and there was no evidence of loss or impairment of muscular sense. Six months after her first illness she became depressed and grew progressively worse, until she was removed to an asylum three months later. While she was there she had marked paresis of the left leg and her memory was bad, but there was no ataxy or sensory anomaly. She accidentally fractured her left femur, but made a good recovery. She became, however, progressively more feeble, and died little more than a year after admission to the asylum. At the necropsy, although the cerebral vessels were atheromatous, no gross lesion was found in the hemispheres. On the inferior surface of the cerebellum on the left side there was an old sclerosed area where the substance of the organ was destroyed to the depth of a quarter of an inch, apparently a result of blocking of the inferior cerebellar artery. The spinal cord in the fresh condition appeared to be healthy. The kidneys were granular and the heart muscle of both ventricles was tough and hypertrophied and the cavities dilated. After hardening and staining, patches of degenerated fibres were found in the sacral cord

in the position of the direct cerebellar or crossed pyramidal tract of the left side, and also around the posterior root; at higher levels these patches increased in size, the direct cerebellar tract being extensively diseased, and the crossed pyramidal tract slightly so. In the upper dorsal region the antero-lateral tract was also affected, and the cells in Clarke's column were diminished in number. In the cervical region there was a trace of degeneration in the opposite antero-lateral tract and also in the posterior column of the same side. Degenerated fibres were also found in both ventral and dorsal nerve roots along the cord. In the medulla and pons the degenerated tracts could be traced upwards until they apparently merged in the restiform body; but scattered patches of degeneration were found at the level of the sixth, seventh, and eighth nuclei. The case, it will be seen, is interesting and important. It is believed by Dr. Campbell to prove the existence of downward conducting paths from the cerebellum in the cord. An examination for upward paths from the diseased cerebellar hemisphere does not seem to have been made, and in a case from which such important deductions are made an examination of both internal capsules as well as of the cortex would certainly have been desirable. Considering the conditions found post mortem it would also be interesting to know what had been the state of the knee-jerks.

BEDFORD INFIRMARY.

WE are glad to observe that at the annual meeting of the governors of the Bedford General Infirmary, held on the 12th inst., the committee of management recommended that the election of the house surgeon should be placed in the hands of the committee. Hitherto it has been the custom for the whole body of governors to take part in such elections—a system which not only involves much personal canvassing, but is not always conducive to a right selection. At the meeting one of the governors made a strong appeal for the retention of the old plan which had existed for "ninety years;" but we can hardly think that his arguments are likely to prevail. The number of such institutions where the paid officers are subject to election at the hands of the whole governing body is constantly diminishing, it being felt that a select committee is in a far better position to weigh the qualifications of candidates judicially and impartially than the large body of subscribers, whose votes may be obtained by personal appeals. It is also proposed that the house surgeon shall hold office for one year and be eligible for re-election, his whole tenure not to exceed three years.

SURGICAL FEES.

ON Monday morning last, at the Clerkenwell County Court, before his Honour Mr. Meadows White and a jury, a case—"Browne *v.* Cowan"—was decided of considerable interest to many in the profession. The case was one of those distressing ones, where an over-distended bladder due to prostatic disease had long existed without treatment. Mr. Reid of Canonbury saw the case and at once realised its importance and gravity, and recommended it to the care of Mr. Buckston Browne. The patient was emaciated, seventy years of age, and worn with constant and painful micturition. He was assiduously attended, at first four times daily, and the bladder very gradually emptied. The late Sir Andrew Clark was called into consultation and every care and precaution exercised; but, as had been feared from the first, the patient gradually sank and died in fifteen days. The friends desired to know the fees and were told thirty guineas, being at the rate of two guineas a day, and two guineas for the consultation with Sir Andrew Clark. During the illness no complaint was made, and afterwards no plea of poverty was brought forward. Immediately upon hearing what the fees were the representatives of the patient wrote to say that they considered them excessive and offered fifteen guineas, and, if this sum was not accepted, declined further correspondence, and enclosed the name and address of their solicitor. This offer was absolutely refused, and later on, through the solicitor, 20 guineas were proposed, and as definitely declined. Finally, the case was brought into court. After paying a graceful tribute to the hard work and generosity of the medical profession, his honour told the jury that in his opinion it ought never to have been necessary to bring such a case forward; but that Mr. Buckston Browne had no alternative but to bring the matter before them. He thought that if 50 guineas had been charged, such a sum would not have been outside the mark. The jury found for the plaintiff for the full amount, and all costs to be paid by the defendant.

SANITATION AND MIDDLE-CLASS DWELLINGS.

THE Croydon County Council have lately instituted a suit against a builder for having used bad mortar in the construction of certain houses at Thornton-heath. It was stated in evidence by Mr. J. Birch, building inspector to the corporation, that the mortar employed, instead of consisting of sand and lime, was made of garden mould and lime. Corroborative evidence was given by the borough surveyor, Mr. Thomas Walker, who added that the bricks also were of the most inferior description, so that "dampness would come through as readily as through a piece of blotting-paper." Although warned, the foreman continued to employ the same materials. The defendant was fined £3 3*s.* and £2 9*s.* 6*d.* costs, or in default twenty-one days' imprisonment.

THE ADMINISTRATION OF SALT SOLUTION AFTER HÆMORRHAGE.

IN the *Allgemeine Wiener Medicinische Zeitung* Dr. Warman draws attention to a new method which he has employed for the administration of salt solution after severe hæmorrhage. This is usually accomplished by injecting the solution into a vein, but this method has many disadvantages, especially in private practice: the solution has to be carefully sterilised, by which much time is lost, the special apparatus required is frequently not at hand, and it is often very difficult in severe cases to find and open the vein. Dr. Warman, therefore, in a case in which there was alarming hæmorrhage after abortion, adopted the plan of injecting about a litre of water, to which a teaspoonful of ordinary salt had been added, into the rectum by means of an ordinary enema syringe. In order to prevent, if possible, an action of the bowels, the fluid was only allowed to enter very slowly. The result, as Dr. Warman expresses it, surpassed all expectations: within a few minutes the patient had a slight rigor, the pulse, which before could not be felt, was distinctly perceptible at the wrist, the respiration became deeper and the patient made a good recovery. Encouraged by this result Dr. Warman has since tried this treatment in twenty-six other cases, and always with success. The rectal method has considerable advantages over intravenous injection, as the solution is easily prepared and no special apparatus or skill is necessary. Dr. Warman thinks that the fluid is entirely absorbed in less than five minutes. He points out that one great danger which is apt to occur in the venous method—namely, over diluting the blood and so destroying the red blood-corpuscles—is quite absent from his method. The chief disadvantage in the rectal method is that in some cases, when the patient is completely unconscious, the sphincter ani does not act properly, and the fluid is not retained in the bowel and immediately runs out. According to Dr. Warman's experience, however, this has only occurred when the hæmorrhage has been less severe; but when much blood had been lost the absorption was so rapid that no difficulty was experienced. The quantity of

solution usually employed was between one and two litres, and all the cases treated were obstetrical ones; but Dr. Warman believes that this method of treatment would be equally serviceable in other classes of cases, but not in enteric fever, when he thinks that there would be considerable danger of removing the scabs from the ulcers.

INTERNATIONAL MEDICAL CONGRESS IN ROME.

WE learn that the South-Eastern Railway Company, in conjunction with the French and Italian railways concerned, will issue to members and their families attending the Eleventh International Medical Congress in Rome, March 29th to April 5th, 1894, special through return tickets to Rome from Charing-cross and Cannon-street stations at practically a single fare for the double journey, either *viâ* Boulogne or Calais, Paris, and Modane or Vintimille. These special tickets, which will be available for the return journey up to May 10th, will be issued to each traveller only on presentation of his personal letter of invitation.

THE DIFFUSION OF SMALL-POX.

THE records of small-pox prevalence last week in the great towns of England and Wales show a distinct decrease of the disease. In London 17 cases were admitted to hospital; no death was recorded; and 78 persons remained under treatment on Feb. 18th, a number identical with that of a week earlier, 62 cases being on the river, and 16 at Highgate Small-pox Hospital. West Ham had 14 cases, with one death; New Swindon and Bristol 4 cases each; Walsall 6 cases, a further decrease continued during four successive weeks; Birmingham 48 cases, a little over 5 per cent. of the preceding week, 7 deaths being registered; Aston Manor 8 cases; Manchester 3 cases, following one a week earlier; Oldham 9 cases, and Bradford only 3 new attacks, with 2 deaths. Several other towns had cases numbering from one to three.

THE SOUTHAMPTON CORONER ON UNQUALIFIED ASSISTANTS.

THE attendance of an unqualified assistant in a case of sudden death at Southampton—that of William Harding, aged twenty-eight, a dock labourer, a steady young man—led the coroner, Mr. W. Coxwell, to comment on medical practitioners employing unqualified assistants, saying that it lowered the profession and was a wrong practice, and that not one penny could be recovered for their services. The practitioner, whose assistant had attended, retorted that such assistants were employed throughout the country, that it was not illegal, and that medical men could not afford to pay qualified men. This sharp passage of arguments puts into a small compass a good deal of truth on which we have not leisure at present to comment, but which we commend to all concerned—not least to practitioners and to those ill-advised young men who drift into the chronic position of unqualified assistants.

HYDATID CYST IN THE PAROTID REGION.

AN interesting and rare case was recently shown before the Société de Médecine et de Chirurgie de Bordeaux by Dr. Piéchaud.[1] It occurred in a child aged twelve, who had had for some months a swelling in the right parotid region. The tumour was the size of a large orange, flattened, sessile, and adherent to the deeper structures, with marked fluctuation. It had caused a considerable amount of pressure in the neighbouring parts; the arch of the palate was depressed; there was difficulty in moving the under jaw; and in the region of the right tonsil there was a prominent projection, soft and fluctuating, resembling the external swelling, of which it was manifestly a part. On placing the patient in a suitable light it was demonstrated that this enormous tumour was semi-transparent, and by means of palpation, made at the same time from within the mouth and in the parotid region, fluctuation was found to be so distinct that the existence of a single encysted mass of fluid was placed beyond doubt. After having dismissed neoplastic growths which might be found in that region as improbable, Dr. Piéchaud came to the conclusion that it was a hydatid cyst, but in order to corroborate his diagnosis he sent to Professor Auché, for examination, some of the liquid which had been removed by an exploratory puncture. This liquid exhibited the following characteristics: the amount was six cubic centimetres; it was clear, the specific gravity was 1006, and on standing it yielded no deposit. In reaction it was faintly alkaline. Not a trace of albumen could be obtained, but there was a considerable quantity of salt (5 grammes in 1000). On microscopical examination no cellular elements could be seen, and no crystals. Although special search was made, no scolices or hooklets could be found, but, considering that the fluid was drawn off with an exploring needle only, this was not a matter for surprise. Cultures were also made of the fluid in various nutrient media, but no growth resulted. The diagnosis of hydatid cyst was supported by this examination, so far as it goes; but the further course of the case has not yet been recorded.

[1] Journal de Médecine de Bordeaux, Feb. 4th, 1894.

SCHOOL ATHLETICS IN RELATION TO MENTAL TRAINING.

THE mere circumstance that discussion has long been and still is active in seeking to define the true position of physical exercise in relation to mental training should suffice to prove the essential nature of the connexion which binds together these diverse methods of education. Each is in its own place indispensable, and this fact happily is in a greater or less degree recognised in every school curriculum, even the most humble. The reason is not difficult to find when we consider how closely and inseparably associated is the health of the mind with that of the body. It is not in the nature of things that we should be capable of sustained and vigorous mental activity unless due provision be made for the purification and nutrition of tissue, including that of the brain, by means of an active blood circulation. The relation between the latter and muscular energy requires no explanation. It is true that bodily activity does not confer mental power or even encourage mental exertion. It is also true that exceptional powers of mind have displayed themselves in persons physically weak; but neither of these admissions affects our present argument, which maintains the certain advantage resulting to all mental processes, ordinary or exceptional, from that which promotes the health of their nidus in the brain. A further benefit conferred by physical training is its influence upon character. A host of mushroom frailties, vices, and foibles break down in presence of such vigorous growths as the resolution, the endurance, and the manly self-reliance engendered by a habit of orderly and energetic action. Justice, fairness, and fellow-feeling are developed by the same wholesome training, and thus many a boy at school acquires almost unconsciously that living force of character without which intellect is but a brittle gem. For obvious reasons our public schools have taken a leading part in promoting physical education in this country. The pupils trained in them are, in very many cases, resident, and the consequent responsibility for their bodily health imposed upon teachers who act in loco parentis has no doubt had to do with the formation of a compulsory system of exercise. Administered with due regard to individual fitness or unfitness, we regard this arrangement as beneficial, and we welcome the development of a similar, though naturally somewhat less stringent, method in the management of day-schools throughout the country. Into

the comparative merits of the particular means employed we cannot now enter. It is enough that the principle which they express is generally admitted, and that those who now administer education are for the most part firmly convinced of its importance as a power to be regulated and employed for the mental as well as the physical well-being of those under instruction.

THE HEALTH OF THE PREMIER.

WITH regard to some very sensational statements which were recently published in an American newspaper concerning the condition of Mr. Gladstone's eyesight, we are able to state on excellent authority that no conversation of the nature described ever took place, and that the paragraph in question conveys a most highly sensational and exaggerated idea of the condition of Mr. Gladstone's sight, and is calculated to cause premature and unnecessary alarm.

EPILEPTIFORM TIC AND EPILEPSY.

IN the *Revue de Médecine* of last July M. Féré published a few notes of a case bearing out the opinion expressed long ago by Trousseau that many cases of so-called epileptiform facial neuralgia bear a close relationship to true epilepsy. A short abstract of this paper appears in the last number of the *Neurologisches Centralblatt*. The patient was a man forty-two years of age, in whose case this relationship was clearly shown. For several years he had suffered from typical severe attacks of facial neuralgia, especially in the distribution of the second and third branches of the fifth nerve. In July, 1891, there appeared attacks of true epilepsy alternating with the neuralgic attacks. A further point of interest lies in the fact that the patient's mother was an epileptic. Treatment with bromides had the effect of abolishing for a time both the epileptic attacks and also the attacks of pain.

CHARGING FOR CERTIFICATES FOR SCHOOL BOARD CHILDREN.

IT is doubtful whether the Free Education System has not a slightly demoralising effect on school boards, if not on the parents of pupils. Mr. Gledhill Hallas of the Staniland School Board has been complaining at the school board that medical men are charging parents a shilling for certificates of unfitness to attend school. Why not? There are few more troublesome and responsible pieces of medical duty in these days than giving certificates. And the work should be paid for either by the school board or by the parents. The medical profession is not going to continue to do all sorts of useful work for the public for nothing. Its long patience with regard to this sort of thing is the principal cause of the very inadequate remuneration of medical men.

OPERATION FOR CEREBRAL TUMOUR.

IN the *American Journal of the Medical Sciences* Drs. Richardson and Walton record the case of a patient whose illness commenced with occasional attacks of pain in the head of brief duration; the patient also at times found some difficulty in expressing himself. The headache increased in frequency and severity, there was a certain amount of aphasia and word-blindness, and there was right homonomous hemianopsia. Specific treatment proved unavailing, and an operation was decided on as optic neuritis was now present and the diagnosis of tumour seemed to be certain. The tumour was supposed to be situated either in the occipital lobe or in such a position as to encroach upon it behind the Rolandic area, for no paralysis of motion was present. At the operation the brain was found to be bulged and was granular in appearance. No definite tumour could be felt, although it was suspected that a large one lay underneath, causing the bulging of the cortical substance. Nothing further was done. Recovery from the immediate effects of the operation was good, but the hernia increased, became septic, and the patient died, with symptoms similar to those described except that they were much more intense, fifty-one days after operation. At the necropsy a large lobulated tumour was found occupying the posterior part of the parietal and anterior part of the occipital lobe on the left side. This penetrated nearly to the mesial surface of the brain and had pushed the temporal lobe downward and the occipital lobe backward. The brain around it was rugged and apparently infiltrated with the new growth, which was sarcomatous. This case is one of those in regard to which the medical profession will share the regret expressed by the operator that a larger area of bone was not removed so as to see the exact relations of the parts.

THE PARIS MEDICAL FACULTY AND THE ANARCHISTS.

WE are pleased to note in the pages of a contemporary a refutation of the ridiculous statement lately published respecting the attitude of the medical faculty in Paris towards the convict Vaillant. It was suggested that the body of the dead Anarchist was buried, and, not as usual, conveyed to the dissecting-room, because of a discreet desire on the part of our French *confrères* to avoid incurring the possible resentment of his sympathisers. This absurd insinuation has been cancelled by a later statement, which we are assured gives the true version of what occurred. Dr. Brouardel, who represented the profession, had not received timely notice of the execution, and consequently was not prepared to accept and make the preliminary examination of the body customary in the Paris school at the hour appointed. We are thankful for this later explanation. The disgraceful weakness implied in the *canard* at first circulated was certainly unworthy of any civilised community, and must have caused a feeling of painful surprise among members of the profession in this country. Whatever may be said as to the disputed question of capital punishment in this case, the determined attitude of the French Government in dealing with such outrages as that of the miserable bomb-thrower deserves, and, we trust, will obtain, the firm and undoubting support of every patriotic citizen.

ARE HORSES "PECULIARLY SUSCEPTIBLE TO ELECTRIC SHOCK"?

THIS question has arisen in connexion with the recent accident at Bournemouth. It will be remembered that in this case one horse was killed and another injured owing to alleged deficient insulation of an underground high tension electric light wire, the current having reached the animals through several inches of roadway. The answer will depend upon the sense in which the word "susceptible" is used. Used as it is here, it would seem to imply that an electrical current on entering the body meets with some anatomical peculiarity or physiological "susceptibility" that makes the horse more vulnerable than other animals to the action of such a current. In this sense it is difficult to see good grounds for the statement. If, however, it is intended to say that the conditions under which horses usually work facilitate the access of electric currents to the body the statement has doubtless good foundation. The hoof, and more particularly its crust and sole, is a good insulator, but, being shod, there is not only presented to the ground a large metallic contact, but this contact is in connexion with metallic conductors in the shape of nails, which pierce the strongest part of its insulation and afford an easy electrical path into the body. The great superincumbent weight of the animal is another element in improving the contact with "earth." Further, it may often happen that in passing over wet ground the external surface of the hoof and the hair of the fetlock,

especially in the case of untrimmed horses, may become sufficiently wet to form a good surface conductor and so carry a current directly from the earth to the upper part of the body, thereby eliminating the safety afforded by the natural "resistance" of the hoof. It is also to be remembered that a horse, covering more ground than a man, will be in contact with points of ground further apart, and thereby risk is increased. These considerations do not, of course, touch the question of accidents to horses during thunderstorms. In these cases the animal is often killed by what is known as "return shock" (the sudden discharge of an insulated conductor), and here the insulation afforded by the hoof, so far from being protective, becomes an additional element of danger.

COMPRESSION OF THE UMBILICAL CORD DURING DELIVERY BY FORCEPS.

DR. SWAYNE has recently again directed attention to the danger to which the child is exposed during delivery by forceps from pressure of the extremities of the blades on the umbilical cord, should it be so situated as to be compressed when the forceps has been applied. In a former communication on the subject Dr. Swayne instanced 153 cases of forceps delivery. In 23 of these the child was either born dead or died soon after delivery; in 4 out of these 23 cases he attributed the death to compression of the cord by the forceps—that is to say, that this injurious compression had been noticed in the proportion of once in 38 cases. Since the time when this series of cases was published Dr. Swayne has had 71 forceps cases, with 10 deaths of infants, and among these 10 stillbirths there were 2 cases in which the child's death was due to pressure of the forceps on the cord. In this second series, then, the accident in question occurred once in 35 cases—not very different from the frequency noted in the preceding series. Spiegelberg's estimate of the fœtal mortality in forceps cases is 17 per cent. It certainly seems to be the fact, as Dr. Swayne says, that this particular danger—that is to say, compression of the umbilical cord by the forceps—has not received perhaps so much attention as it deserves. Dr. Swayne still agrees with a passage which he quotes from a paper by Dr. Galabin published in 1877—namely, "that it has not been shown that the majority, or any considerable proportion, of the stillbirths which now occur in Britain would be preventable by a more timely resort to forceps."

A MEDICAL OFFICER OF HERTFORD UNION AND HIS BOARD.

AT a meeting of the Hertford Union, one of the guardians, Mr. Ashwell, without notice having been given to the medical officer, said that he had "a serious matter to bring forward," and asked the reporters not to publish it. The matter was that their medical officer, Mr. Wylie, had not visited a girl suffering from sore-throat, which proved to be fatal diphtheria, because he had not received an order to do so. His instructions are that he is neither to attend nor give medicine without an order. Even without an order he saw the patient the next day and notified the case on the day following—as soon as he had satisfied himself that it was actually one of diphtheria. The reporters circulated the remarks of Mr. Ashwell, which had thus a good week's start of Mr. Wylie's explanation, which was ample and spirited, ending with his resignation, in the hope that the guardians would get an officer who was more able to comply with such ambiguous instructions and yet escape the censure of doing so. The board felt the justice of Mr. Wylie's complaints. Mr. Ashwell said he had not meant to bring any charge against Mr. Wylie, but only to investigate the nature of the orders by which the medical officer was to be guided; which, of course, might have been done by asking Mr. Wylie, or through a committee, and without publicly seeming to reflect on the medical officer, in his absence and in the presence of reporters, who, by the way explained that no request was made to them by Mr. Ashwell not to report his remarks. It was moved and carried that Mr. Wylie's resignation be not accepted. In consideration of this, and of his being entirely exonerated from blame, he withdrew his resignation. Mr. Ashwell refused to admit that he had done anything wrong; but on reflection he will find that he treated the medical officer with scant respect.

CONTRACTION AND DILATATION OF THE PUPIL.

TWO Italian medical practitioners, Drs. Spallitta and Consiglio, have carried out some interesting experiments on this subject, and an abstract of their paper appears in a recent number of the *Revue Générale d'Ophthalmologie*. They point out that some writers assert and others deny that contraction of the pupil follows excitation of the third nerve. They find that both are right, for in their experiments it transpired that excitation of the nerve at its apparent origin in the inter-peduncular space did not produce contraction of the pupil, while its excitation close to the cavernous sinus did. This they found by another series of experiments to be due to a simultaneous excitation of the ophthalmic branch of the fifth nerve, which at this point is in close connexion with the third. A closer examination led them to conclude that the modifications of the pupil produced by section or excitation of the fibres of the fifth nerve is dependent upon the presence of vaso-motor filaments, and that the myosis which follows section of the fifth nerve is due to a paralysis of the vaso-constrictor fibres and a slight excitation of the vaso-dilators; while the myosis which results from stimulating the same branch is due to excitation of the vaso-dilator fibres, which produces a greater effect than stimulation of the vaso-constrictor fibres.

ON Thursday next, March 1st, a medico-psychological meeting of the Neurological Society will be held at 20, Hanover-square, when a paper on "Imperative Ideas" will be read by Dr. Hack Tuke, and another on the "Out-patient Treatment of Incipient Insanity" will be presented by Dr. Rayner. A pathological meeting in connexion with the same society will be held on April 19th.

MR. HERBERT WILLIAM PAGE, Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital, has accepted the invitation of the Council of the Harveian Society to deliver the Harveian Lectures next session. He has chosen a subject of practical importance—viz, Some Disorders of Nervous Function due to Injury and Shock.

DR. PYE-SMITH will deliver the first Hunterian Society lecture of the current year at 8.30 P.M. on Wednesday next, the 28th inst., at the London Institution, Finsbury-circus. The subject selected is Rational Therapeutics, and the lecture will be open to all members of the profession.

AS had been arranged by the members of the Opium Commission prior to their departure for India, the evidence which has been submitted to them will be considered and the report deliberated upon in London.

MR. HECTOR W. G. MACKENZIE, M.A., M.D. Cantab., M.R.C.P. Lond., has been appointed Lecturer on Pharmacology and Therapeutics in the medical school of St. Thomas's Hospital.

THE anniversary dinner of the Medical Society of London will be held at the Hôtel Métropole, in the Whitehall Rooms, on Thursday, March 8th.

PROFESSOR JOHN STRUTHERS, Professor of Anatomy in the University of Aberdeen; Dr. Alfred Hill, Medical Officer of Health of Birmingham; and Dr. Francis J. Allan, Medical Officer of Health for the Strand District, London, have been elected Fellows of the Royal Society of Edinburgh.

THE London County Council will shortly issue a report on the London water-supply, in which will be discussed the present position of that question, and which will contain the reports of the engineer and the medical officer of health.

AT a recent meeting of the Aberdeen University Court it was announced that the bequest of the late Miss Anderson of £5000 was now available to be paid to the university for the purpose of founding a medical scholarship.

THE fourth Italian Congress of Pharmacy and Chemistry will be held in Naples from Sept. 2nd to Sept. 7th in the present year. The Congress will be divided into two sections—the one scientific, the other professional.

ISOLATION HOSPITALS AND THE NEW ACT.

THE broad provisions of Lord Thring's Bill were enumerated by us[1] after the measure had been amended by the Standing Committee of the House of Lords, and we now give in greater detail the provisions of the Act. This statute (56 and 57 Vict., c. 68), which dates from Dec. 21st of last year and is, consequently, but a few weeks old, extends the powers of county councils to establish hospitals for the reception of patients suffering from infectious diseases. In the latter term are included small-pox, cholera, diphtheria, membranous croup, erysipelas, scarlet fever, typhus fever, typhoid fever, enteric fever, relapsing fever, continued or puerperal fever, as well as any infectious diseases to which the Public Health Act of 1889 may have been applied by the local authority of the district in question. Under the Public Health Act of 1875 (38 and 39 Vict., c. 55, ss. 131, 132, 133) local authorities were empowered to provide hospitals or temporary places for the reception of the sick. Certain powers were also given to guardians of unions regarding the transfer of buildings, &c., to rural sanitary authorities for use as infection hospitals (Poor-law Act, 1879, s. 14). The new statute does not extend to Scotland or Ireland, or to the administrative county of London, or to any county borough (the lists of county boroughs being given in the Local Government Act of 1888, 3rd schedule). It may, however, be applied, with the consent of the council, to any borough containing a population of 10,000 persons or upwards, and, with the consent of the council, backed by an order of the Local Government Board, to any borough containing a smaller population. Speaking generally, the Act will apply principally to the counties, and all county councils are empowered to establish isolation hospitals upon proof being adduced as to the necessity for their establishment. A county council may set the Act in force in two ways: (1) upon its own motion and at its own accord; and (2) upon being petitioned by any of the following local authorities—(*a*) as respects an urban sanitary district, the urban sanitary authority, which is defined by the Public Health Act, 1875 (s. 6), to include the mayor, aldermen, and burgesses acting by the council of a borough constituted before the passing of the Act (always excluding county boroughs, as shown above), or the improvement commissioners of any Improvement Act district similarly constituted and having no part of its area situated within a borough and not coincident in area with a borough or Improvement Act district; (*b*) as respects a rural sanitary district, the rural sanitary authorities defined in the Act of 1875 (s. 9) as the guardians of any union not coincident in area with an urban district &c., with certain qualifications and restrictions; (*c*) the vestry of any contributory place, where it is a parish; (*d*) the rural or sanitary authority of any contributory place where it is not a parish; and (*e*) by any number of ratepayers, not less than twenty-five, in any "contributory place." Application will be made by the petition of any of the authorities mentioned and must be in pursuance of a resolution duly passed by a majority of members at a meeting duly called; and the petition must state the district for which the isolation hospital is required and the reasons which the petitioners adduce for its establishment.

The county council, being satisfied that a *primâ-facie* case is made out for a local inquiry, will then cause one to be made. Independently of petition, however, the county council may direct a report to be made by its medical officer, and in the event of that report advising the establishment of an isolation hospital the council can proceed to effect such establishment just as if it had been duly petitioned by the authorities or ratepayers as already shown; and the costs incurred by these preliminary inquiries are chargeable as structural expenses and payable out of the local rate—i.e., the rate out of which the expenses in the execution of the Acts relating to public health are paid.

Every hospital district constituted under the new Act is to consist of a single "local area," or of two or more local areas, "local areas" being either (1) an urban sanitary district (as defined in s. 6 of the Public Health Act, 1875, and referred to above); or (2) a rural sanitary district (as defined by s. 9 of the same Act and also referred to above); or (3) "a contributory place"; or (4) where a local area is included in more than one county (as in the case of a poor-law union), the part of the local area included in each county; but the county council petitioned may vary the limits of the district proposed in the petition by the addition or subtraction of any "local area," and a "local area" which is already provided with such isolation hospital accommodation as, in the opinion of the county council, is sufficient for its reasonable needs is not to be included in a hospital district without the assent of its local authority and may appeal within three months to the Local Government Board if its wishes are not respected.

The preliminaries of inquiry being over, the county council is empowered to make an order either dismissing the petition or constituting a hospital district and directing an isolation hospital to be established, though the latter step can only be taken when the sanitary authorities of a rural sanitary district or local area assent or are proved to be unable or unwilling to make suitable hospital accommodation. Having constituted a hospital committee, the county council will form a committee which may consist wholly of members of the county council, or only partly of its members and partly of representatives of the local area or areas, or wholly of the latter, and will regulate their election, qualifications, &c. A hospital committee thus formed may purchase or lease land, within or without the hospital district, for the erection of the isolation hospital, or for purchasing or building a hospital and maintaining it, as the county council may empower them to do; but the council must retain the power to inspect the hospital and of raising money by loan for its purposes. Matters relating to the management of the hospital will be regulated by the hospital committee; and every such institution is bound to have an ambulance for the conveyance of patients to it and must so far as practicable be in connexion with the system of telegraphs. Where an outbreak of infectious disease is expected, its committee can provide additional temporary accommodation, and similar temporary accommodation can be provided before the hospital has had time to be erected.

Subject to any regulations made by the county council, the hospital committee can arrange for the training of nurses for attendance on patients suffering from any infectious disease either inside or outside the hospital and can charge for the attendance of nurses sent out from the hospital; and the expenses of such nurses, after deducting any profits derived from their services, are to be "establishment expenses" of the hospital—that is, will be included in the cost of general maintenance.

The isolation hospital will be entitled to payment for all its patients—i.e., to cover the cost of conveying, removing, feeding, medicines, disinfecting, and all other things required for them individually, exclusively of structural and establishment expenses. These will be paid by the patients, except when the latter are paupers, when the payments will be made for them by the guardians of the union from which they were sent. Patients requiring special accommodation will be given

[1] THE LANCET, Aug. 5th, 1893.

it on their agreeing to pay special charges in proportion, the rate of which the hospital committee will fix.

These are the chief provisions, simply stated, of the new Act; and a county council is empowered to borrow, on security of the county rate, for the purposes of carrying its provisions into effect.

THE INTERNATIONAL SANITARY CONFERENCE.

(FROM A SPECIAL CORRESPONDENT.)

SEVENTEEN nationalities are represented at the International Sanitary Conference now sitting in Paris. The interests of the East are defended by delegates from British India, Persia, Turkey, and Russia. There are in all forty-three delegates, nearly all the European nationalities having representatives present. Early in the proceedings it became necessary to divide the Conference into two sections. The first section will discuss all that relates to the Red Sea, the Suez Canal, and the pilgrims travelling to and from Mecca by sea. The second section is to investigate the state of affairs in the Gulf of Persia and the overland pilgrimages. But the representatives of the French Government are more particularly anxious to press forward the condition of sanitation in India. With this view a diagram has been prepared at the French Ministry of the Interior setting forth that, in spite of the boasted improvements, the prevalence of cholera in India has increased to an alarming extent. The figures are taken from the reports of the Sanitary Commissioner with the Government of India and date from 1878 to 1891. During the latter year there were no less than 601,603 deaths in India attributed to cholera. Though the cholera death-rate has fluctuated considerably, the diagram shows that the number of deaths in India is vastly increasing. Under these circumstances it is urged that precautions should be taken on the departure of ships from India. Dirty linen, it is alleged, should not be brought on board, and a medical inspection of travellers from contaminated districts should be imposed before they are allowed to embark from Indian ports. M. Henry Monod, Director of the Sanitary Department at the Ministry of the Interior, has published in his book on Cholera a diagram showing how the death-rate from this disease has been reduced in England in consequence of sanitary measures. But for India the cholera diagram gives a reverse result; it shows an increase and not a decrease in the number of deaths. The French are constantly blamed for the bad sanitation of their towns. Undoubtedly nothing could well be worse than the condition of many districts at Havre, Toulon, Marseilles, and many other places; but our French critics reply by expressing first their admiration for the sanitary progress accomplished in England and then by lamenting that similar progress has evidently not been realised in India. It should be borne in mind, however, that it is impossible to institute any comparison between India and European countries. India contains some 300 millions of human beings, most of them of the very poorest class, living under climatic conditions altogether different from those which prevail in Europe. The rural population is distributed in villages supplied with water derived from wells, tanks, and rivers. There is no system of water-supply or drainage like that which is to be found in European towns. In addition to being poor, they are influenced by caste prejudices; and it would be impossible to carry into practice a system of sanitation according to the ideas of Western civilisation. Considering the vast extent of the country and its enormous population, hampered as it is by religious prejudices, social habits, and general ignorance of the elements of sanitation, it is hardly to be wondered at if the improvement in this direction has progressed slowly. The diagram, on the other hand, shows no ratio of cholera mortality to the population, which must greatly have increased since 1878.

So far the proceedings of the Conference have progressed with great harmony. Hopes are entertained that the labours of the Conference may be terminated by Easter. The delegates have a great deal of business to occupy their time, and the claims of hospitality absorb what little leisure may be remaining.

THE PUBLIC HEALTH IN 1893.

THE Registrar-General's return for the last quarter of 1893 contains a brief summary of the vital statistics of England and Wales for the entire year, which is not without interest. The English death-rate, which steadily increased in the four years 1888–91 from 18·1 to 20·2 per 1000, declined to 19·0 in 1892, and was 19·2 in 1893. The rate in 1893 corresponded with the mean annual rate during the ten years 1883–92; the rate was very considerably below the average in each of the first two quarters, while in the third quarter, owing to exceptional summer heat, and in the fourth quarter to the fatal prevalence of influenza, the death-rate exceeded the average. The death-rate for the year, but for the exceptionally long and hot summer, would undoubtedly have been decidedly below the average. The death-rate in the principal urban population was equal to 20·2 per 1000, corresponding with the ten years' average, whereas in the remaining and mainly rural population the rate did not exceed 17·4, and was 0·2 below the same average. Thus in equal numbers living the proportion in 1893 of deaths in urban districts were 116 to 100 in the rural districts; the excess of the urban mortality being slightly above the average. Infant mortality showed a considerable excess in 1893, the deaths of infants under one year of age being equal to 159 per 1000 registered births, while the mean proportion in the ten years 1883–92 did not exceed 144; this excess was mainly due to the exceptional fatality of diarrhœa caused by the prolonged prevalence of high summer temperature. The death-rate last year among persons aged between one and sixty years was 10·0 per 1000 persons estimated to be living at those ages, while among persons aged upwards of sixty years it was 71·1 per 1000; in the preceding year the rates at these groups of ages were 9·9 and 75·5 per 1000 respectively. It would appear, therefore, that but for the high rate of mortality under one year of age the English death-rate in 1893 would have been below the average rate in the ten preceding years. The deaths registered in 1893 included no fewer than 28,755 which were referred to diarrhœa, or more than double the number returned in the preceding year and exceeding the number in any year since 1880. The fatal cases of diphtheria, enteric fever, scarlet fever, and small-pox also showed in 1893 a marked excess upon the numbers respectively returned in the preceding year. The deaths from diphtheria exceeded the number recorded in any year on record; those from enteric fever were more numerous than in any year since 1884; and those from small-pox exceeded those in any year since 1885. The fatal cases of measles and whooping-cough, however, were considerably below the average. Inquests were held respecting 32,839 deaths registered during the year and were in the proportion of 5·8 per cent. of the total deaths. In 14,336 cases, or in 2·5 per cent. of the total, the cause of death was not certified by a registered medical practitioner or by a coroner. It is satisfactory to note that compared with previous years the proportion of inquest cases showed an increase, while that of uncertified deaths was the lowest on record. The deaths referred to all forms of violence in 1893 were 18,753, equal to a rate of 0·63 per 1000 persons living; this death-rate from violence also showed a further decline from the rates recorded in recent years. It may also be noted that the marriage-rate in 1893, so far as it has been reported, corresponded with the average in the ten preceding years; while the birth-rate, although very slightly exceeding the rate in 1892, was only 30·8 per 1000, and was 1·1 per 1000 below the ten years' average.

PRESENTATION.—At a late meeting of the directors of the Royal Caledonian Asylum their medical officer, Mr. Daniel Mackay Forbes, L.R.C.P., L.R.C.S. Edin., was presented with an illuminated address, descriptive of their high appreciation of his professional services to the charity. The presentation was made by Sir J. R. Heron-Maxwell, the chairman of the asylum, who in doing so spoke of the great esteem in which Mr. Forbes is held by all connected with the institution, to the prosperity and efficiency of which he had so largely contributed. The address was accompanied by a parchment entitling the owner to the privileges of a donor of 250 guineas.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Bradford Urban Sanitary District.—Dr. Arnold Evans, in issuing his annual report for 1892, expresses regret that, owing to stress of work, its publication had been so delayed. Regarded from a statistical standpoint, Bradford during 1892 had a good record. Its general death-rate was but 17·91 per 1000, as compared with 21·15, 23·22, and 22·12 for the preceding three years; the infantile mortality was 155 per 1000 births, as against 181 for 1891; while 1·46 per 1000 of the population represented its zymotic death-rate. A series of 12 cases of diphtheria occurred in the Children's Hospital between March 5th and April 6th, and Dr. Evans inclines to the view that the disease, having been once introduced, spread from person to person. In reference to this point, it would have been of interest had he stated the amount of cubic space devoted to each patient, and also whether any of the nurses were attacked with diphtheria or sore-throat at the time. Small-pox was imported into Bradford by tramps, and there were altogether 25 cases during the year. The case mortality among the vaccinated, as recorded by Mr. Foster, the medical superintendent, was 9 per cent., that among the unvaccinated being 66·6 per cent.; none of the hospital staff contracted the disease. We shall look forward with much interest to Dr. Evans' report for 1893 as regards the behaviour of small-pox in Bradford during that year. Especial attention was paid in 1892 to the sanitary condition of factories in Bradford, and an interesting account will be found in Dr. Evans' report of the several methods of excrement disposal in vogue in the factories. The water-carriage system seems to be the prevailing one, and the excrement receptacles used are, as a rule, that form of trough closet known as the "Macfarlane." In this the troughs are constructed of iron, and, as Dr. Evans points out, there is a great tendency for the soil to adhere to the rough sides of the trough; he suggests that coating the metal with enamel would in a large degree diminish the friction. As a result of his survey, he recommends, among other things, that there should be regulations drawn up and enforced as regards the number of closets to be provided for the workpeople, and that all tank closets should be forthwith abolished.

Kettering Urban Sanitary District.—The most important feature in Mr. Winter Dryland's report for 1893 is an account of the outbreak of enteric fever which occurred during the months of August to December inclusive. In the early part of the year there were a few cases in certain parts of the town which Mr. Dryland was inclined to account for by badly flushed house drains and closets, but in the late summer and autumn the majority of cases were found to be employed at either one of two factories, or to be attending a certain school. The drainage at all three of these places was defective, and Mr. Dryland, after being able to exclude polluted water and milk as sources of infection, concluded that the cause of the outbreak was to be found in the defective sanitary condition of the school and factories and in persons passing over the manholes of adjacent sewers. There were altogether 111 cases and 20 deaths from enteric fever during the year in a population of 22,000, and Mr. Dryland advises, as a means of preventing such an outbreak in the future, that all closets should be provided with a proper water-supply and that the drains and sewers should be regularly flushed. As regards notification, we observe that the Kettering sanitary authority refuse to accept, or, at any rate, pay for, the notification of two or more cases of the same disease occurring within a month of each other in the same household.

Stapleton Urban Sanitary District.—The general death-rate of this district for 1893 was 13·46 per 1000, being, with the exception of the year 1889, the lowest yet recorded. Dr. William Brown, the medical officer of health, states that measles was entirely absent from his district during the year, "no case being heard of." It does not, however, appear that measles has been added to the list of notifiable diseases. Some good work seems to have been done in the district during 1893, and we note, among other things, that thirty houses formerly drawing their water from polluted wells are now supplied by the Bristol Water Company, and that 165 cesspools have been abolished. Dr. Brown urges upon his sanitary authority the importance of providing an isolation hospital, and he adds that in face of the difficulty which has been experienced in obtaining a site, it should apply for a provisional order for acquiring land compulsorily.

Chelmsford Rural Sanitary District.—Both Dr. Thresh and the sanitary authority of Chelmsford are to be congratulated upon the excellent work which has been accomplished in their district during the year. This is especially noticeable in the matter of water-supply, a scheme having been carried out by means of which four villages will receive an abundant supply of pure water. Commenting upon this provision Dr. Thresh remarks—presumably referring to the Public Health (Water) Act, 1878—that "throughout the whole of the area supplied by the mains cottages can now be erected and occupied without the authority having to give certificates containing statements not strictly true." Three other villages in the district have been provided with public wells, and at Ingatestone the turbidity of the existing water-supply has been entirely removed by filtration through polarite and sand. In addition to these great improvements the Local Government Board have recently sanctioned a loan for the erection of a fever hospital, and there is a prospect of good work being done during the present year in the direction of sewerage. *Apropos* of an inspection of some of the public-houses in the district, Dr. Thresh suggests the desirability of requiring a certificate testifying as to their sanitary condition prior to a licence being either granted or renewed. Some interesting instances are contained in the report before us of what appear to have been very mild attacks of scarlet fever, and Dr. Thresh inclines to the view that the evidence in these cases pointed to a progressive infectivity, such, for instance, as has been so frequently noticed in regard to diphtheria. In dealing with this latter disease Dr. Thresh describes a limited outbreak which serves to illustrate the acknowledged proclivity of throats weakened by a recent attack of scarlet fever to form suitable culture grounds for the activity of the micro-organism of diphtheria. We are glad to hear that the Essex County Council have established a bacteriological laboratory in their county town, and Dr. Thresh and Mr. Houston are now carrying on an investigation into the nature and inter-relations of the several micro-organisms found in throats affected with diphtheria.

Maldon Rural Sanitary District.—Unfortunately a proposal to supply five villages in this district with water from Danbury has fallen through, and thus, at least as regards the water-supply, the district compares unfavourably with that of Chelmsford. Dr. Thresh naturally regrets the abandonment of this scheme, which, he adds, was one of those which met with no opposition; but it appears that he is already engaged with the surveyor in elaborating another. Preliminary negotiations were entered into in 1893 for the provision of a fever hospital for the joint use of Maldon urban, rural, and port districts, but so far no satisfactory conclusion seems to have been arrived at. Perhaps the Essex County Council will be able to put some pressure on the authorities concerned under the Isolation Hospitals Act, 1893. At Tollesbury an extensive outbreak of scarlet fever arose from one (apparently unrecognised) case, the patient having returned to school while still desquamating. Many persons in this village made clothes for Colchester firms, and by obtaining from the latter lists of their outworkers Dr. Thresh was able to prevent the spread of the disease through this agency. Several of the cases of scarlet fever notified from different parts of the district were intimately associated with influenza, and Dr. Thresh thinks it is possible, since some of them were not observed to desquamate, that the rash may have been due to influenza. There is, however, little doubt that in some cases of scarlet fever, desquamation is of a very faint, branny, and transitory nature, so that we should not be inclined to attach too much weight to this point, unless the patient was examined while in bed and also day by day. In regard to diphtheria, mention is made of some interesting cases illustrating one of the points brought out in Dr. Thorne Thorne's Milroy Lectures[1]—viz., the tendency of children once attacked by the disease to again become victims to it in subsequent outbreaks. Dr. Thresh, indeed, mentions one case in which a girl was notified as suffering from diphtheria four times in three years. It would have been of interest, had it been stated, to know whether the intervals

[1] THE LANCET, Feb. 21st and 28th and March 7th and 14th, 1891.

between any or all of these attacks were bridged over by a more or less chronic sore-throat. At Burnham there was an extensive outbreak of diphtheria, which appears to have had its origin in an ill-defined case of sore-throat which occurred in a school-girl who lived in a house in which diphtheria had been recently present. The outbreak was an interesting one from many points, and instanced the frequent association between diphtheria and other forms of throat affection. In respect of typhoid fever, four cases occurred in cottages supplied with water from a small stream into which typhoid excreta had apparently gained access. Essex is one of the counties into which large quantities of London manure are sent, and Dr. Thresh relates three instances in which men who were engaged in spreading the manure were attacked with various symptoms. One suffered from vomiting, another from sore-throat and diarrhœa, and the third, a fortnight later, developed typhoid fever. The relation between London manure and outbreaks of sore-throat, diphtheria, and other ill-defined illnesses is one of great interest and no small difficulty. Although the manure does not, as a rule, contain human excrement, it is obvious that such may from time to time find its way into it; and Dr. Franklin Parsons, in his exhaustive report upon manure nuisances, states that in one instance he observed in London manure dressings, bandages, &c., which had apparently been brought from a hospital. In this way, then, it would be possible to account for enteric fever, though so far as we are aware there are but few instances recorded where the disease has been reasonably attributed to this manure. As Dr. Thresh points out, it is very difficult to make any regulations for preventing ill effects to persons whose work it is to deal with town manure, though much may be done as regards the general public by carrying out Dr. Parsons' suggestions as to transit, storage, &c. Dr. Thresh's report is a very thorough and suggestive one.

Clitheroe Urban Sanitary District.—The estimated population of this district in 1893 was 11,100, its general death-rate was 16·6 per 1000, and the infantile mortality was 170 per 1000 registered births. There were 175 cases of scarlet fever notified, the fatality rate being 5·7 per cent. The total zymotic death-rate was 2·3 per 1000. There has been a marked decline in the number of deaths from phthisis in the district within recent years, and Mr. Fraser, the medical officer of health, points out that the decline has been especially marked in the poorer parts of the district owing, among other things, to the improvements in the dwellings of the working classes. The water-supply of the district is said to be "adequate and excellent in quality," and intercepting sewers are being constructed to receive the sewage which now passes into affluents of the river Ribble. The sanitary authority have, however, not as yet provided either a fever hospital or a disinfecting apparatus.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6351 births and 3747 deaths were registered during the week ending Feb. 17th. The annual rate of mortality in these towns, which had declined from 28·5 to 19·1 per 1000 in the preceding five weeks, further fell last week to 18·7. In London the rate was 18·6 per 1000, while it averaged 18·7 in the thirty-two provincial towns. The lowest rates in these towns were 11·2 in Croydon, 11·6 in Derby, 12·4 in Halifax, and 14·9 in Nottingham and in Blackburn; the highest rates were 21·6 in Bolton, 22·2 in Manchester, 22·8 in Salford, 25·4 in Liverpool, and 27·0 in Wolverhampton. The 3747 deaths included 423 which were referred to the principal zymotic diseases, against numbers declining from 548 to 431 in the preceding five weeks; of these, 133 resulted from whooping-cough, 86 from diphtheria, 74 from measles, 49 from scarlet fever, 42 from diarrhœa, 29 from "fever" (principally enteric), and 10 from small-pox. No fatal case of any of these diseases occurred last week in Brighton; in the other towns they caused the lowest death-rates in Sunderland, Blackburn, Croydon, and Cardiff, and the highest rates in Derby, Salford, Plymouth, Wolverhampton, and Birkenhead. The greatest mortality from measles occurred in Leicester, Birkenhead, and Wolverhampton; from scarlet fever in Huddersfield and in Burnley; from whooping-cough in Salford, Sheffield, Swansea, and Plymouth; and from "fever" in Derby. The 86 deaths from diphtheria included 58 in London, 4 in Leeds, and 3 in West Ham. Seven fatal cases of small-pox were registered in Birmingham, 2 in Bradford, and 1 in West Ham, but not one in London or in any other of the thirty-three large towns. There were 78 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 17th inst., against 78, 82, and 77 at the end of the preceding three weeks; 17 new cases were admitted during the week, against 18 and 15 in the preceding two weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital, which had been 2534, 2491, and 2387 at the end of the preceding three weeks, had further declined to 2270 on Saturday last; 199 new cases were admitted during the week, against 245 and 224 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had declined in the preceding five weeks from 762 to 372, further fell last week to 340, and were 117 below the corrected average. The causes of 61, or 1·6 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Salford, Oldham, Leeds, Sunderland, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Huddersfield, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·0 and 19·7 per 1000 in the preceding two weeks, further declined to 19·2 during the week ending Feb. 17th, but was 0·5 per 1000 above the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 10·3 in Paisley and 17·5 in Edinburgh to 23·9 in Perth and 27·4 in Leith. The 548 deaths in these towns included 35 which were referred to whooping-cough, 9 to diphtheria, 8 to scarlet fever, 7 to diarrhœa, 5 to "fever," 2 to small-pox, and 1 to measles; in all, 67 deaths resulted from these principal zymotic diseases, against 81 and 74 in the preceding two weeks. These 67 deaths were equal to an annual rate of 2·3 per 1000, which slightly exceeded the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had declined from 51 to 28 in the preceding three weeks, rose again to 35 last week, of which 14 occurred in Glasgow, 6 in Leith, and 5 in Edinburgh. The deaths referred to diphtheria, which had increased from 6 to 17 in the preceding three weeks, declined to 9 last week, and included 5 in Glasgow and 2 in Aberdeen. The 8 fatal cases of scarlet fever showed a slight decline from the numbers recorded in recent weeks, and included 6 in Glasgow. The deaths referred to different forms of "fever," which had been 5 and 7 in the preceding two weeks, declined again to 5 last week, of which 2 occurred in Edinburgh. Of the 2 fatal cases of small-pox 1 was recorded in Edinburgh and 1 in Leith. The deaths referred to diseases of the respiratory organs in these towns, which had been 128 and 121 in the preceding two weeks, were 122 last week, and were 43 below the number in the corresponding week of last year. The causes of 51, or more than 9 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 33·6 and 33·1 per 1000 in the preceding two weeks, rose again to 33·3 during the week ending Feb. 17th. During the past seven weeks of the current quarter the death-rate in the city has averaged 33·3 per 1000, against 22·0 in London and 18·7 in Edinburgh. The 223 deaths in Dublin during the week under notice almost corresponded with the number in the previous week, and included 23 which were referred to the principal zymotic diseases, against 20 and 21 in the preceding two weeks; of these, 10 resulted from whooping-cough, 4 from diarrhœa, 3 from measles, 3 from "fever," 2 from scarlet fever, 1 from diphtheria, and not 1 from small-pox. These 23 deaths were equal to an annual rate of 3·4 per 1000, the zymotic death-rate during the same period being 2·5 in London and 1·9 in Edinburgh. The fatal cases of whooping-cough, which had declined from 12 to 8 in the preceding four weeks, rose again to 10 last week. The deaths referred to different forms of "fever," which had been 2 and 4 in the preceding two weeks, were 3 last week. The mortality from measles and

from diarrhœa exceeded that recorded in recent weeks. The 223 deaths registered in Dublin last week included 40 of infants under one year of age and 68 of persons aged upwards of sixty years; the deaths of infants showed a slight decline, while those of elderly persons exceeded those recorded in any recent week. Fifteen inquest cases and 7 deaths from violence were registered; and 71, or nearly a third, of the deaths occurred in public institutions. The causes of 15, or nearly 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-CAPTAIN G. CREE, under War Office authority dated Jan. 20th, 1894, proceeded to the depôt of the Medical Staff Corps, Aldershot, on Feb. 17th, to undergo a course of instruction. Surgeon-Major-General Davis, who has arrived from India, has been appointed Principal Medical Officer at Portsmouth, in succession to Surgeon-Major-General Inkson, under orders for Malta. The following officers have embarked for India in the *Serapis:* Surgeon-Colonel Cuffe, Brigade-Surgeon-Lieutenant-Colonel Burnett, and Surgeon-Lieutenants Hughes and Dunn. Brigade-Surgeon-Lieutenant-Colonel O'Reilly and Surgeon-Captain Kelly have arrived from India in the *Euphrates.* Brigade-Surgeon-Lieutenant-Colonel Townsend has been posted to the Station Hospital, Cork. Surgeon-Major Beatty has arrived in England on completion of a tour of service on the West Coast of Africa. The following officers have rejoined their stations from leave of absence: Surgeon-Major Woodhouse, Woolwich; Surgeon-Major Hoysted, North-West District; Surgeon-Major Crofts, Eastern District; Surgeon-Lieutenant-Colonel Blood, Southern District; and Surgeon-Majors Anderson and Risk, Aldershot.

ARMY MEDICAL STAFF.

Surgeon-Captain Frederick Samuel Heuston, F.R.C.S. Irel., is seconded for service. The undermentioned Surgeons on probation are gazetted as Surgeon-Lieutenants: Harold Vernon Prynne; Alfred Edmund Master, M.B.; George Dansey-Browning: Ernest Shaw Clark, M.B.; Kennet Bruce Barnett, M.B; Michael Boyle, M.B.; Kenneth Mackenzie Cameron, M.B.; Charles Marlay Fleury; Arthur Claude Fox; Sebert Francis St. Davids Green; and Walter Tibbits, M.B.

INDIA AND THE INDIAN MEDICAL SERVICE.

Brigade-Surgeon-Lieutenant-Colonel J. C. G. Carmichael, M.D., I.M.S., has arrived in Calcutta and assumed Charge of the office of Principal Medical Officer, Presidency District. Surgeon-Colonel G. Thomson, I.M.S., Officiating Principal Medical Officer, Presidency District, to be Principal Medical Officer, Lahore District, in succession to Surgeon-Colonel G. C. Chesnaye, who has completed his tour of service. The services of Surgeon-Captain E. R. W. C. Carroll, I.M.S. (Bengal), are replaced temporarily at the disposal of the Chief Commissioner of Assam. The services of Surgeon-Captain B. H. Deare, I.M.S. (Bengal), are placed temporarily at the disposal of the Government of Bengal. Surgeon-Major Addison, A.M.S., is transferred from general duty, Mhow District, to general duty, Poona District. Surgeon-Major Yourdi and Surgeon-Captain T. Birt, A.M.S., are transferred from general duty, Aden District, to general duty, Bombay District. Surgeon-Captains W. E. Jennings and J. Crimmins have respectively delivered over and received Charges of the Ratnagiri District Gaol. Surgeon-Lieutenant-Colonel H. Boyd, 45th (Rattray's Sikh) Regiment of Bengal Infantry, has received furlough for one year, and Surgeon-Captain J. J. C. Watson, M.D., A.M.S., leave for six months.

NAVAL MEDICAL SERVICE.

Fleet-Surgeon Nicholas Thomas Connolly has been placed on the Retired List, with permission to assume the rank of Deputy-Inspector-General of Hospitals and Fleets (dated Feb. 11th, 1894).

The following appointments are announced: Fleet-Surgeon Isaac H. Anderson, M.D., to Cape of Good Hope Hospital. Staff-Surgeons: William E. Breton, M.D., to the *Trafalgar;* S. T. O'Grady, to the *Collingwood;* Arthur W. Russell, to the *Ganges;* Robert M'Ivor, M.D., to the *Mersey;* and John Hunter, M.D., to the *Superb.* Surgeons: W. H. Pryn, to the *Defiance;* Ernest J. Finch, to the *Alecto;* Henry W. G. Green, to the *Nile;* Charles F. Warren, to the *Karrakatta;* and James Bradley, M.D., to the *Speedy.*

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Thomas L. Laxton, having resigned his Volunteer appointment, ceases to be an officer of the Army Medical Reserve of Officers.

VOLUNTEER CORPS.

Artillery: 8th Lancashire: Surgeon-Lieutenant T. Bushby resigns his commission.—*Engineer:* 1st Lanarkshire: Robert Oswald Adamson, M.B., to be Surgeon-Lieutenant.—*Rifle:* 1st Lanarkshire: Surgeon-Lieutenant R. C. Lees, M.B., to be Surgeon-Captain.—1st Sutherland (the Sutherland Highlanders): James Bertie Simpson, M.D., to be Surgeon-Lieutenant.—16th Middlesex (London Irish): Captain James Edmund Campbell Bradley, M.B., is appointed Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Holburt Jacob Waring, M.B., to be Surgeon-Lieutenant.

DEATHS IN THE SERVICES.

Brigade-Surgeon James Watson, F.R.C.S. Eng., late Army Medical Staff, died at the Tower of London on the 9th inst. at the age of fifty-seven. He became assistant surgeon in the army in 1859, surgeon in 1873, surgeon-major in 1874, and retired on half-pay in 1880. He served throughout the North China campaign of 1860, receiving the medal with clasp. He also served throughout the New Zealand War from 1863 to 1866, and took part in the Ashantee War of 1873 and 1874; for his service in both of these wars he obtained medals.—Deputy-Inspector-General of Hospitals F. E. Reynolds died at his residence near Dublin, aged seventy-four years. The deceased officer was late of the Military Train, and formerly attached to the 2nd Battalion Rifle Brigade.

THE SICK SOLDIER IN INDIA.

Our service contemporary, the *Army and Navy Gazette,* calls attention to the nursing of sick soldiers in India and elsewhere as a matter of pressing importance. As regards India, the amount of enteric fever that appears year after year among our European troops is well known. Skilled nursing forms a most essential part of the management and treatment of that disease, and we fear that our young soldiers cannot obtain skilled nurses among the men of the Native Army Hospital Corps. Trained female nurses are undoubtedly the best for such cases, but notwithstanding the efforts which have been made of late years to introduce lady nurses into India they are not available in sufficient numbers, and they are, of course, liable to attacks of fever and climatic disease like other people. The number of European soldiers' wives in India is relatively small, and they are quite untrained. The matter is a really pressing and urgent one, but it is not at all clear how it can be best met. A medical staff corps for India, composed of Europeans, would be a very expensive provision, and there would probably be much inefficiency from sickness among the men composing it, who would themselves be liable to contract enteric fever and other complaints whilst serving in India. It seems to us that there should be a certain number of trained European nurses appointed to superintend, at any rate, the nursing of the more serious cases of disease at all the larger station hospitals in India, and that the Indian Government should carefully consider the whole question with the view of ascertaining whether some scheme could not be devised for improving the nursing organisation in Indian hospitals.

THE FOOD-SUPPLY OF THE FRENCH ARMY.

The attention of the Secretary for War in this country was recently called to the question of the meat-supply for the British soldier. It appears that the rations and food-supply of the French soldier have also been lately engaging the attention of some members of the French Chamber, who have submitted a resolution to the House on the subject. As the provisioning of the troops in times of war and in peace and during military manœuvres, necessitates the purchase of a large quantity of preserved meat every year it is proposed to increase the number of preserved meat factories in France, especially in the districts in which cattle are reared, so as to render the French army independent of foreign supplies.

THE CONTAGIOUS DISEASES ACTS.

A majority of the Chatham Town Council has recently passed a resolution in favour of the re-enactment of the Contagious Diseases Act, and directed the town clerk to write

to the General Officer commanding the district, urging him to use his influence in the matter. This course was adopted as the result of a discussion of the late circular letter from the Duke of Cambridge calling attention to the state of morality of garrison towns. Notwithstanding all that the opponents of these Acts have urged, it cannot, we think, be denied that the morality and outward observance of decency were vastly altered for the better in those places which came under their operation or that the Acts exercised a beneficial influence in repressing sexual immorality. Moreover, unfortunate women had then an opportunity of being cured of their physical ailments and of obtaining moral and religious aid, and a chance of reclamation which they could not have otherwise procured.

THE COLLISION AT WARINA BETWEEN THE FRENCH AND ENGLISH TROOPS.

There can be no doubt whatever from the detailed accounts which have been published of the fighting at Waima that the collision between the French and English troops was entirely attributable to an unfortunate misapprehension. Surgeon-Major Morgan of the Medical Staff must have had his hands full of work on the occasion. The young French officer, Lieutenant Maritz, who was in command of the French force, was mortally wounded, and was buried side by side with the English officers and others who were killed. Lieutenant Maritz, it is gratifying to learn, received every attention from Surgeon-Major Morgan, who had medical charge of the West India Regiment and of the wounded during the fighting. The men of this regiment who have arrived at Freetown on their return from the Sofa expedition are said to be much broken down with malarial fever and the hardships they have undergone. A native sergeant and six men died on the march from the effects of that fever.

H.M.S. *Malabar* is expected at Portsmouth about the 21st inst. with eighteen patients for Netley.

Correspondence.

"Audi alteram partem."

"PLACES AND COMMONPLACES IN THE TREATMENT OF RENAL DISEASE."

To the Editors of THE LANCET.

SIRS,—I hasten to remove an erroneous statement from my climate table which appeared in THE LANCET of Feb. 10th. The mean daily range at Davos Platz is given as 46·8° F., which I find to be based on a misunderstanding and to be much too great. I cannot at this moment give the right figures, but lose no time in withdrawing the wrong ones in the hope that I may be in time to prevent any reproduction of them. From the point of view taken in the paper the detail is of little importance, as I suppose that under renal disease Davos Platz would have no interest save as a place to be avoided.

I am, yours truly,

Feb. 19th, 1894. W. HOWSHIP DICKINSON.

"EXPERIMENTAL DEGENERATION OF THE PYRAMIDAL TRACT."

To the Editors of THE LANCET.

SIRS,—As I take to myself the blame, in the first instance, of the misunderstanding between Dr. Mellus, Professor Horsley, and Professor Sherrington, allow me to briefly state the facts that there may be no mistake as to the points at issue. It was acting upon the instructions of Professor Horsley, in October, that I informed Professor Sherrington of Dr. Mellus' work; I cannot, therefore, claim the initiative of having acquainted Professor Sherrington with the research commenced in the University College laboratory. As the result of the conversation which I had then with Professor Sherrington I communicated, at the first opportunity, with Professor Horsley and gave him to understand that Professor Sherrington was not continuing the work. I had gathered this from the brief conversation with Professor Sherrington, but if this was a misinterpretation of what he meant then I am alone to blame for it. I know that neither Professor Horsley nor Dr. Mellus had the slightest idea that Professor Sherrington was engaged upon the same research. Had they realised what Professor Sherrington was doing, of course they would have communicated at once with him. Not for one moment suspecting the least reason for misunderstanding, I quite recently had an interview with Professor Sherrington about a totally different matter and in the course of conversation incidentally mentioned, in speaking of the results we were obtaining in our laboratory, that Dr. Mellus' paper would be shortly published, inasmuch as I had seen a proof of it and knew it was sent in before Christmas to the Royal Society. Although I thus had an exchange of views with Professor Sherrington on the subject shortly before he published his note, he did not give me any hint of his intention or that he was working at the matter. In justice to Professor Horsley it must be pointed out that my name was introduced into this question by Professor Sherrington and not by Professor Horsley, as reference to Professor Sherrington's note of Feb. 3rd will show.

I am, Sirs, yours truly,

RUBERT BOYCE.

Pathological Department, University College, London, Feb. 19th, 1894.

THE MEDICAL DEFENCE UNION.

To the Editors of THE LANCET.

SIRS,—In your issue of Feb. 3rd you make some comments upon the report of the Medical Defence Union. As those comments were made before the annual meeting took place, and consequently before the members had an opportunity of expressing their opinion, we regret that no report of that meeting has appeared in your columns, especially as the members who were unable to be present have no opportunity of knowing what took place except through the medium of newspaper reports. The acceptance of the report was strongly opposed in consequence of the Council having undertaken to defend a member of the union in an action brought against him by another member in direct opposition to a resolution unanimously passed at the previous general meeting, "that the funds of the Union should not be used to support or defend any action made against another member of the profession." This action of the council is totally at variance with the feelings of practically all the unofficial members, and the case in question is likely to cost the Union a large sum of money, as the member who is being fought by his own council is naturally indignant and has, we understand, taken legal proceedings against the Union. As the general meeting was so poorly attended by private members it is proposed to call a special meeting with a view to passing a definite rule prohibiting the council from employing the funds of the Union in any disputes between members of the Union. In reference to your comments upon the question of amalgamation, you will be pleased to hear that the meeting unanimously passed a resolution requesting the council to take steps to resume negotiations with the London and Counties Medical Protection Society.

We are, Sirs, yours faithfully,

J. HENRY CHALDECOTT.
J. H. GWYNNE.
GEO. N. ROBINS.
ERNEST A. SNAPE.
SEPTIMUS SUNDERLAND.
ALEXR. LOUIS ACHARD.

Feb. 20th, 1894.

"MORTALITY FROM CANCER."

To the Editors of THE LANCET.

SIRS,—In brief reply to Dr. Walters' criticisms upon my letter respecting the above subject, I would point out that by the same argument which makes parallelism of the male and female cancer curves indicate a stationary mortality, it follows that divergence shows an increase and convergence a decrease. Hence it would appear that there has been an increase of cancer in Ireland, for the Irish curves diverge, and a decrease in Scotland, the curves here converging, and that neither in Scotland nor Ireland would the theory of the stationary nature of the mortality from cancer hold; but the British figures are doubtless too rough for the application of the delicate principle involved in this test, and the exact parallelism of the English curves must be looked upon as largely accidental. Dr. Walters speaks of a convergence of

the Irish male and female curves; according to the diagram in Mr. King's and Dr. Newsholme's pamphlet they are double as far apart at their endings as at their beginnings. With respect to the Scottish Widows' figures, referring as they do to a select class where the process of selection has been modified considerably during the period under consideration, it is difficult, if possible, to apply them to questions concerning the general population, and so I intentionally refrained from discussing them.

I am, Sirs, yours truly,

Feb. 20th, 1894. THOS. GLOVER LYON.

MALE NURSES.

To the Editors of THE LANCET.

SIRS,—In your annotation on male nurses you remark on the lack of protection to their interests and the large deductions from their earnings in some institutions "which nominally exist for their benefit." Will you allow me to remind your readers that these remarks do not apply to the "Hamilton Association for providing trained male nurses," which has already more than once secured your commendation. This association was founded by the late Miss Jane Hamilton, if not exclusively in the interests of the nurses, certainly for no other interest except their patients. During the eight years of its existence it has been supported by Miss Hamilton's munificence to the extent of some £1200, and it received further a legacy of £1000 on her decease. Having been associated with the benevolent founder from the commencement of this work and being one of the treasurers, I am able to speak with an intimate knowledge of the matter. The fact that so large a sum has been expended in establishing the association is a sufficient proof that the contributions of the nurses have been on a scale quite insufficient to meet the current expenses; yet you recommend coöperation, the difficulties attending which are in this case great and, I am disposed to think, insurmountable. Nurses, whose occupation is by its nature uncertain and unequal, are not possessed of capital, and have to husband their wages when employed to provide for periods between their cases when they are earning nothing; besides this, their experience, character, and value are most various. Who is to estimate these? Is a highly skilled nurse fit for any emergency to share on the same terms with one only equal to certain duties in more strictly defined cases? Is a man worth four guineas a week to coöperate equally with one only worth half that amount? In a strictly coöperative brotherhood who is to estimate the value of any individual, to investigate his character and antecedents, to assign his duties, and, if needful, censure him or subject him to discipline? Are the coöperators to give each other characters? I have only mentioned some difficulties, but I could fill a whole number of THE LANCET with illustrations of the importance of these things, forced upon me by long experience. Some authority seems to me necessary, and I think the public will be slow to substitute the recommendations of nurses to each other for the estimate of a committee of independent gentlemen, whose only object is to benefit both patients and nurses. The profession is strongly represented on the committee of the Hamilton Association, the work of which has been endorsed with the approval of nearly all our leaders.

I am, Sirs, yours faithfully,

Feb. 19th, 1894. PROSSER JAMES.

"AERIAL CONVECTION OF SMALL-POX FROM HOSPITALS."

To the Editors of THE LANCET.

SIRS,—The questions raised by Dr. McVail's address on the above subject[1] are of great importance to the health of the community, and he deserves our thanks for bringing them to our notice. On the main point for which he has contended I entirely agree with him that the evidence strongly supports his statement that "the contagion of small-pox may be conveyed atmospherically to a distance greater than has been usually admitted," and certainly to a greater distance than Haygarth supposed. Some of Dr. McVail's other conclusions require elucidation. His conclusions relate to (1) contagium, (2) atmosphere, and (3) population. With regard to the contagium he says: "There must apparently be intensity of virus depending on (*a*) the period of the epidemic, a rising epidemic being important." But Dr. McVail has brought forward no evidence to show that the virus is more intense at the beginning of an epidemic. Has he any such evidence or is this a mere matter of speculation? Secondly, he says the intensity of the virus depends on "concentration of acute cases as centres of infection." This, I presume, means that the worse the cases are and the more there are of them in a given place the greater will be the amount of infective matter in that place. So understood, that is a conclusion in which we shall, I think, all agree. His third conclusion is not so plain. He says: "There must apparently be intensity of virus depending on possible minor waves of epidemicity referring to particular days or weeks, these waves constituting flood-tides of infectivity." What are "possible minor waves of epidemicity," and if there are possible minor waves of epidemicity, how do they modify the intensity of the virus? Again, in what way do these possible minor waves of epidemicity refer to particular days or weeks? Again, how do these possible minor waves of epidemicity constitute flood-tides of infectivity? The nautical analogy does not help us. Does Mr. McVail mean to imply that there are, or may be, facts about the method of spread of small-pox of which we are ignorant?

With regard to the effect of the state of the atmosphere on the spread of small-pox it appears to me that more evidence is wanted, but facts seem to point to the conclusion that damp and foggy weather does, as Dr. McVail believes, favour its spread, and that is what might be expected from physical considerations, for the solid matters of fog and a moist atmosphere might be expected to carry a particulate poison better than a clear and dry air. But Dr. McVail reproached Haygarth for "forgetting that only dry matter might be expected to be carried atmospherically." I doubt if the small-pox poison is very dry if it be carried through damp air. Lastly, with regard to the population. There is, of course, no doubt that at the beginning of an epidemic in a previously unaffected population there are more susceptible people than there are later on in the epidemic. The observation is by no means a new one, and I thought it was universally recognised; it is mentioned in that old and well-known book "Copland's Dictionary of Medicine." I cannot suppose that Dr. Whitelegge would consider it a compliment to his medical scholarship to have it implied that he thought it was an original observation of his own. I think that Dr. McVail has, in his address, not quite accurately explained Haygarth's teaching, but considerations of space prevent me from going into this subject, and my object is not to criticise the address but rather to ask Dr. McVail to explain the reasons he had for forming some conclusions in favour of which he did not bring forward any evidence. Particularly I would ask Dr. McVail to explain what he means when he says, with regard to the factors in the spread of small-pox, that "there must apparently be intensity of virus depending on possible minor waves of epidemicity referring to particular days or weeks, these waves constituting flood-tides of infectivity," for this to me is a hard saying.

I am, Sirs, yours truly,

York-street, W., Feb. 19, 1894. RICHARD SISLEY.

[1] THE LANCET, Feb. 3rd, 1894.

"CHRONIC IRRITATION AND CANCER."

To the Editors of THE LANCET.

SIRS,—The letter of Mr. W. Roger Williams, in which he asserts that on "analysis of forty consecutive cases of primary cutaneous cancer ..... it is evident that chronic inflammatory lesions cannot be regarded as the necessary antecedents of cancer," should not, I venture to think, be received with acceptance by the treatment of silence. With the researches of Broussais, published in 1821, we need not, in these advanced times, have anything to say, but the experience of a scientist, such as Volkmann, of 223 cases "recorded at various times by different observers" cannot be negatived by an individual investigation of less than one-fifth of that number. May I be permitted to ask the following questions: (1) What is the proportion of cases of "sweep's cancer" which have been reported in individuals who were not sweeps, or at least exercised cleanliness in the parts attacked? (2) What is the proportion of cases of epithelioma of the lip in those who are non-smokers?

(3) What is the proportion of cases of cancer of the tongue in patients who have been non-smokers and abstainers and who have not had syphilis? (4) What is the proportion of cases of cancer of the breast in males, or in unmarried females to married females and to mothers? (5) What is the proportion of cancer of the uterus in unmarried women, as against the married and those who have borne children? Trusting that these questions may be considered sufficiently pertinent to deserve admission to your columns and a serious answer.

I am, Sirs, yours faithfully,

LENNOX BROWNE.

Mansfield-street, Portland-place, Feb. 19th, 1894.

"NOTIFICATION AND ISOLATION IN SMALL-POX."

To the Editors of THE LANCET.

SIRS,—I am sure you will pardon me for saying that your remarks on the efficacy of notification and isolation in the case of small-pox, contained in THE LANCET of Feb. 10th, are somewhat contradictory. For instance, in answer to the question whether these measures have tended to reduce the amount of infectious disease in London, you say: "In the case of small-pox, it is difficult to doubt they have been efficacious"; and then a little later: "But it would be premature to say that, with the vaccination laws so little appreciated, we may not ere long see an outbreak of the disease which will strain all our existing accommodation." From these latter remarks it would appear that the really efficacious method of dealing with this disease is vaccination, and this accords with Dr. Thorne Thorne's evidence before the Royal Commission on Vaccination. He said: "Isolation, together with compulsory notification, had in certain instances failed in the case of scarlet fever, and, having regard to the fact that cases of adult small-pox occur which are so modified by previous vaccination as to be almost unrecognisable, it is not possible to conceive of any system of isolation, however strictly enforced, that could properly cope with small-pox in such communities as ours." And, moreover, Leicester has been blamed for trusting to notification and isolation and neglecting vaccination. Some years ago the Registrar-General said: "There is nothing to parallel the long-continued decline in scarlatina"; and if notification and isolation had then been in force no doubt these would have been assigned as the cause. What will now be said as to last year's outbreak? We must wait and see; but, so far from London having benefited from notification, even with regard to small-pox, Mr. Biddle informs me that the death-rate from this disease for each of the three years prior to notification was *nil*, but in 1892—i.e., after the Act had been enforced—it actually rose to 0·01, though there was virtually no epidemic prevailing. Notification and isolation may be, and are no doubt, useful, but we want something more certain and unerring than the former at present appears to be.

I am, Sirs, yours truly,

Surbiton, Feb. 20th, 1894. F. P. ATKINSON.

*** We cannot see the contradiction to which our correspondent alludes.—ED. L.

CHELSEA HOSPITAL FOR WOMEN.

To the Editors of THE LANCET.

SIRS,—With reference to an article which appeared in THE LANCET of the 10th inst., embodying some observations of the medical officer of health for Chelsea, I am requested to state that his deductions are based on insufficient and inaccurate data and are therefore misleading. This necessarily renders his report valueless. Full and correct details are being prepared and will be published in due course.

I am, Sirs, yours faithfully,

T. W. EDEN, M.D., M.R.C.P.,
Hon. Secretary to the Medical Staff, Chelsea Hospital for Women.

Bentinck-street, Cavendish-square, W., Feb. 21st, 1894.

BEQUESTS.—The late Mr. Gervas Taylor, of Dublin, left £5000 to the Meath Hospital, £5000 to the Adelaide Hospital, £5000 to the City of Dublin Hospital, £1000 to St. Vincent's Hospital, and £2500 each to Sir Patrick Dun's Hospital and the Children's Hospital, Dublin.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday Collections.

THE collections on Hospital Sunday exceed those of last year by more than £100 and include a donation of £250 from an anonymous donor, who sends it from "A friend to Hospital Sunday." There are still some more collections to come in and it is hoped that the total will reach £6500, or £300 in excess of last year.

The Liverpool Eye and Ear Infirmary.

Mr. Edgar A. Browne, senior surgeon to the Liverpool Eye and Ear Infirmary, has completed his full period of twenty years' service as surgeon, having served previously as assistant surgeon. He will still retain his connexion with the hospital he has served so long as one of its consulting staff. It would be difficult, if not impossible, to estimate the extent to which the infirmary is indebted to Mr. Browne. It was owing mainly to his energy that the patients were removed fourteen years ago from the very inadequate premises which they then occupied to the present model buildings. Mr. Browne is well known as a contributor to ophthalmic literature and also as a successful operator. His lectures given to general practitioners at the hospital have been always well attended and greatly appreciated.

Feb. 20th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Prosecution of a Carlisle Surgeon under the Notification Act.

THE case I mentioned in my last notes of a conflict between the Carlisle sanitary authority and a practitioner in that city came before the magistrates last Friday. The defendant was charged with having failed to notify to the medical officer of health that a patient whom he was attending was suffering from scarlet fever between Jan. 14th and 18th. The principal witness was the sanitary inspector who saw the patient and thought it was scarlet fever. The medical officer of health for the city stated that he had received no notification of the case, which he saw on Feb. 4th, when he came to a very definite conclusion that it was not a case of scarlet fever; it was, however, a red rash such as attacked children in their first dentition. The accused practitioner stated that on the second day he visited the child the rash was fading, and it disappeared on the fourth day. He took precautionary measures, but there was no fever at all. The mayor said that the bench would dismiss the case, but added, very curiously, "that, in their opinion, the surgeon would have done better if he had reported the case to the medical officer." The dismissal gave rise to cheers.

Sunderland Eye Infirmary.

At the Sunderland Eye Infirmary last year 1620 patients were treated and 103 operations performed, while the number of in-patients amounted to 73. The total consultations by the medical staff reached the large number of 8308.

Berwick Sanitary Authority: Improvements at Spittal.

Of Spittal, a favourite seaside resort of the people of Berwick, the medical officer of health's report says that many improvements of a sanitary kind have now been effected in the town; notably a beautiful esplanade has been made along the beach, which, coupled with the "Spa," ought to make Spittal rank with any of the seaside resorts along the coast.

Darlington and District.

Dr. Chisholm of Hurworth-on-Tees has been awarded, for the sixth successive time, the biennial grant by the Local Government Board for successful vaccination.—Naturalists will be glad to hear that the Marquis of Zetland, in coöperation with other gentlemen, has stepped in and stopped the sale by auction of the many curiosities in the Richmond and North Riding Naturalists' Field Club.—An inquest was held last week at Darlington on a child aged four years and a half, who had been poisoned by acetic acid. The child obtained the acid from a drawer in a bedroom and drank it, dying about twenty-four hours afterwards.

Small-pox in the County of Durham.

It is stated that small-pox has broken out afresh in the

Consett district of the county of Durham. As it is a thickly populated place it is feared that it may assume an epidemic form.

Newcastle-on-Tyne, Feb. 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS)

The Morison Lectures at the Royal College of Physicians, Edinburgh.

DR. BATTY TUKE, in his second lecture, said that in dealing with the anatomy of a convolution, it was not his intention to work out the dynamics of a delusion. His purpose was to demonstrate how the normal economy of the apparatus may be implicated by disease and how best to restore healthy relations. The chemistry and mechanics of psychical processes were matters of surmise and theory; all that could be said was that mental action was a function of connexions, and that we had a right to infer that when the continuity of these were destroyed, interrupted, or structurally impaired, modification of function must ensue. At present, the physical basis of mental phenomena could only be surmised, and under this he referred to the investigations of Meynert and Ramon y Cajal as to afferent and efferent paths. Cajal says that "With some limitations it may be affirmed that the psychical functions are inseparably associated with the presence of the pyramidal or psychical cells." This is held partly on the ground that these bodies become larger and more complicated the higher we go in the animal series. Such was the line of thought and research amongst a large class of anatomico-physiological workers. No one attempted, however, to throw any light on the nature of the acts or could explain how a peripheral excitement reaching the cerebral layer could be converted into two such different things as a motor act and a state of consciousness. He next proceeded to consider the causes of implication of the apparatus. Amongst the various causes the study of the pathological results of over-exertion of the brain was at once the most interesting and important. The resultant mental phenomena constituted the most common and most easily cured form of insanity. All attempts to relate what were spoken of as "moral" causes with insanity took the form of endeavouring to construct a psychological nexus between cause and symptom, without demonstration of the intervention of any structural change in the cortical tissue. He referred to his former Morison Lectures, in which he had endeavoured to show why we should regard "moral" causes as inducers of physical changes in the cortex which might result in morbid phenomena of varying intensity. There could be no doubt that hyperæmia of the superior surface of the brain occurs in direct relation to psychical activity. Mosso and others had cited instances. It was still an open question how the functional hyperæmia was brought about. The existence of some controlling nervous influence might, however, be almost inferred. He discussed the question of pressure in the arteries at the base of the brain and referred to observations made under his direction on this point. Then he referred to the conclusion that Roy and Sherrington had arrived at, that "the chemical products of cerebral metabolism contained in the lymph which bathes the walls of the arterioles of the brain can cause variations of the calibre of the cerebral vessels; that in this reaction the brain possesses an intrinsic mechanism by which its vascular supply can be varied locally in correspondence with local variations of functional activity." Mosso had clearly demonstrated that fatigue caused by psychical action produces not only a poisonous effect on the general system, especially the muscular, of a person experimented on; but also that the injection of blood taken from an exhausted animal into the circulation of animals at rest produces in them the extreme indications of fatigue. He is of opinion that the symptoms of poisoning are produced more from the breaking down of nerve cells than from any impairment of nutrition. He next took up the observations of Hodge, who made a long series of experiments on the effects of electrical stimulation on the spinal ganglion cells of frogs, &c., and on the effect of normal fatigue on the cerebral cells of birds and the honey-bee. The results of these observations are to the effect that metabolic changes in nerve cells are as easy of demonstration microscopically as those of gland cells, and that they are of the same character. There were changes in the nucleus, and in its staining capacity, and also a shrinking in the cell protoplasm, with enlargement of the pericellular lymph spaces. He then referred to Lambert's experiments in the same direction. He was led to the conclusion that the poison of fatigue was elaborated from the material lost during the period of work. Hodge's experiments extended to the process of recovery of individual nerve cells after electrical stimulation, which he found to be slow. There was no evidence as to what the poison was but it was probably something midway between albumose and a body of simple constitution, possibly urea, and that it had an acid reaction. Expenditure of energy meant expenditure of material, which was met by functional hyperæmia existing for such time as the stimulus was maintained. When it was withdrawn rest was obtained, and the vessels returned to their normal calibre. Stimulation abnormal in degree, kind, or duration might make such demands on the local circulation as to produce in the brain pathological conditions extending to the tissues. Continuous or frequently recurring excitation or irritation called for an increase of blood; the vaso-motor nerves became overstrained; the dilatation of the vessels was maintained by lessened alkalinity of the cerebro-spinal fluid; and the discharge of energy of the cells became irregular. If this state of matters is maintained it leads to congestion and what was to all intents a sub-inflammatory condition evidenced by deposits of leucocytes between the hyaline membrane and the muscular coat, red corpuscles in various stages of degradation, masses of pigment, proliferation of connective tissue cells, and by exudation. Concurrently with, or at short periods after, the establishment of hyperæmia, there is implication of the important functions of the lymphatic system. Owing to the basal position of the openings of the skull, even slight pathological alterations, either at the vertex or the base, but especially the vertex, must implicate the maintenance of the vascular unity of the cerebrum, if they interfere with the removal of lymph fluid. Continued upward pressure must draw back the fluid by interfering with the patency of the pial conduits, the only relief being by the pacchionian villi. In subjects of chonic insanity these organs are often much hypertrophied, due to the demands made upon them for the relief of the waste products of the organ. Obstruction to the outward flow may also result from the deposit of débris from the breaking down of leucocytes, endothelium, and by deposits of blood-pigment, which collect in the perivascular lymph space. The drainage being thus obstructed, the cells are subjected to the action of a fluid which is in an unphysiological condition and is loaded with the products of waste. The pericellular sac is connected with the hyoline sheath by a fine tubule, the aperture of which is apt to be occluded by an abnormal flow of exudate carrying with it débris. Such exudation fluid, when confined, probably acts detrimentally by pressure on the conducting power of the vaso-motor systems, and thus helps to maintain the general condition of hyperæmia and congestion. In evidence of these facts he submitted specimens from the convolutions of four patients who died within two months of the incidence of insanity; in two the symptoms were those of mania, in the others melancholia. The differences are more in degree than in kind, and there was every right to assume that cases minor in degree as to symptoms were dependent in morbid action and pathological products similar in kind, although less in degree. These solutions of continuity of the brain-elements produced by congestion of the convolutions were, he believed, the early symptoms of idiopathic insanity—i.e., the insanity produced by over-exertion of brain function. The initial symptoms of this condition were insidious, and physical phenomena were the first to present themselves. These consisted of a feeling of fulness or uneasiness of the head, or in a dull heavy pain extending from the forehead to the vertex, or even further back to the occiput, in some cases throbbing of the temples and eyeballs. There was a general feeling of *malaise*, the pulse was irritable, the temperature rose slightly at night, the general system became impaired, disturbances of the digestive system manifested themselves, and the nutrition of the body suffered. In women menstruation was affected. The mental symptoms followed closely. They consisted of anxiety, restlessness, irritability, inability to apply the mind to the ordinary affairs of life, a strong tendency to introspection, concentration in self, and sleeplessness. Up to this point it is rarely possible to predict with certainty whether the case will culminate in acute mania or acute melancholia. If no check is applied to the progress of morbid processes loss of the function of control over ideas is manifested by

excitement in one of two directions, and either a condition of acute melancholia or acute mania is established. The chain of symptoms was referable to the brain conditions, which had been sketched. They were the outward expression of gradually increasing fatigue affecting the whole system, and manifested in the brain by what appear to be slight, but what were really important implications of psychical function. Along with abnormal hyperæmia there was headache, irritability, and restlessness. In connexion with the restlessness it was to be borne in mind that the naked-eye evidence of morbid action in the insane was focussed round the sensory motor areas. Was it pressing theory too far to suggest that as the cells in this region of the cortex were the first to meet with morbid exudates, and being those of whose functions one appeared to be the translation of sensory impulses into motor acts, restlessness might be the indication of impairment of their activity? The giant pyramids were the first to show marked altered structure, and it was for this and other reasons difficult to refuse the inference that they were the structures implicated, and that concurrently with the advance of pathological events in them, what was at first mere restlessness waxes into the excited action of acute mania or acute melancholia. He believed that the divergent symptoms in mania and melancholia were dependent on common pathological conditions, and he submitted a number of clinical observations in support of this position. These observations pointed, he thought, not to a difference in kind of primary causation, but to variations of symptoms in accordance with the progress and nature of pathological processes, which varied principally in accordance with the constitution of the tissue of the individual.

Edinburgh Fever Hospital.

At the meeting of the Public Health Committee last week it was reported that at the end of December last there were 194 patients, of whom 134 were discharged during January and 11 died, while 111 new cases were admitted. At the end of January 160 cases remained in hospital.

Edinburgh Royal Maternity Hospital.

Dr. D. C. Edington and Dr. W. C. Hamilton have been appointed house surgeons at this hospital for six months in succession to Dr. Easterbrook and Dr. Elder.

Edinburgh Royal Sick Children's Hospital.

The annual meeting of the contributors to this hospital was held last week. The total number of cases treated in the wards was 633, and in the dispensary 8004, while there had been 131 vaccinations. The ordinary income had been £4425 and the expenditure £4808.

Small-pox in Edinburgh and Leith.

No new cases of small-pox were reported in Edinburgh last week, but one death occurred from the disease. In Leith five new cases were reported.

Aberdeen.

Some charges of mismanagement have recently been brought forward against the City Hospital for Infectious Diseases, which have been, after careful examination, completely refuted. In view of this it is satisfactory to note that the medical officer of health, Dr. Matthew Hay, in his last monthly report states that he has received several gifts in money for the benefit of the hospital from grateful patients. In his quarterly report also he shows that the public have confidence in the institution, for 70 per cent. of all the scarlet fever cases reported in the city were removed there for treatment without any serious objection on the part of any of the relatives or friends. The beneficial effect of the superior nursing and healthy environment is shown by the mortality, that in the hospital being 4 per cent., while in the cases treated at their own homes it amounted to 11 per cent. The total admissions for the quarter were 177, as compared with 78 in the preceding quarter. Seven of these died—5 from scarlet fever, 1 from small-pox, and 1 from measles.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Dublin Main Drainage Scheme.

AT the annual meeting of the Dublin Sanitary Association held recently the Lord Mayor gave an explanation of the present deadlock. It appears that in obtaining the provisional order under which the corporation proposed to carry out the main drainage scheme the War Office insisted on inserting a clause giving them a veto on the entire project in consequence of alleged interference with the Pigeon House Fort. After this provisional order was passed the corporation approached the War Department, and the matter was referred to the Sanitary Committee of the War Department, of which Sir Charles Cameron is a lay member. The committee visited Dublin and adopted a report, from which Sir C. Cameron dissented. The report was dealt with by the War Office and they refused to allow the main drainage scheme to proceed, on the ground that it would be injurious to the health of the troops at the Pigeon House Fort. The corporation then approached the War Department with a view to seeing whether the difficulty could not be removed, and it was suggested by the War Office that the corporation should purchase the fort for £65,000. In addition they required a clause declaring that if the present difficulties were removed and the works constructed, should the health of the soldiers stationed there in connexion with the submarine mining station be injured, then the entire works should be removed. Under these circumstances the corporation cannot proceed at present with the scheme; and, indeed, there are a large number who are of opinion that should the scheme be carried out it would be of little service, and would entail increased taxation on the ratepayers.

Royal University of Ireland.

At a recent meeting of the Senate the following Medical Fellows were appointed:—Anatomy: A. E. J. Birmingham, Joseph P. Pye, and J. Symington. Physiology: John J. Charles and Charles P. Coppinger. Medicine: John Isaac Lynham. Surgery: Patrick J. Hayes and W. T. Stoker. The following examiners have been appointed for 1894:—Medicine: J. F. O'Carroll. Midwifery: J. W. Byers and A. J. Smith. Materia Medica: F. J. Quinlan and William Whitla. Ophthalmology: L. Werner and J. Walton Browne. Medical Jurisprudence: C. Y. Pearson and Antony Roche. Pathology: W. H. Barrett and E. J. McWeeney. Sanitary Science: Sir Charles Cameron.

Cork District Lunatic Asylum.

During the past year there were 1352 patients under treatment in this asylum, of whom 260 were admitted during the year. The number of admissions is 17 below 1892 and 7 below the average of the past ten years. Four of these were cases of general paralysis, a form of brain disease which is almost unknown in Ireland. Although the numbers in the asylum are steadily increasing, showing an annual average increase of 28 for the past seven years, this must not, Dr. Woods remarks, be accepted as conclusive evidence that the ratio of insanity is on the increase; it is rather due to the gradual accumulation of patients remaining after the discharges and deaths. Twenty-eight per cent. of those admitted in the past ten years still appearing on the books of the asylum. Some recent writers, he adds, have assumed that insanity is making rapid strides, but if first admissions to asylums are to be the main test this is not the case in Cork county, as the average of first admissions has varied little for the past ten years. The number under treatment in the asylum, taking into account the decrease in the population, has, however, increased from 1 in 520 in 1883 to 1 in 401 in 1893. The mortality numbered 105, or 9·4 per cent. on the average number resident, and is higher than for the past five years, but is slightly below the average mortality of the asylum, which is 9·7 per cent. Phthisis, as usual, accounts for a large number of the deaths, 45 being due to this cause. The new building was opened in October, but pending the completion of part of the works only 240 of the quiet and harmless patients could be transferred. The sewerage has been well designed, carefully laid, and thoroughly ventilated. It is satisfactory to learn that 76 per cent. of the inmates are kept occupied at useful employments. The total expenditure amounted to £22,850 14*s.* 8*d.*, or £20 12*s.* 1*d.* per head, which is £1 12*s.* below the average cost of asylums.

Feb. 20th.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Medical Education and Examination in New Zealand.

IT was unanimously resolved at an ordinary meeting of the Wellington branch of the New Zealand Medical Association on Oct. 11th, 1893, "that a committee be formed to

consider the question of medical examination and education in New Zealand." On Nov. 8th they presented their report to the president and members of the association, and it was agreed to. They say that they are of opinion that the time has not yet arrived when medical degrees may with advantage be granted in the colony and base this opinion upon the consideration of the following facts. Firstly, that owing to the sparseness of the population there is not enough material from which to provide for the effective clinical instruction of the students, and in order to prove this statement they instance the very striking case of the University of Wales at Cardiff. "Recently an application was made for the power to grant medical degrees. The whole medical press was unanimous in pointing out that the facilities for clinical instruction were not such as to make it desirable to grant such a power, and the General Medical Council of Great Britain refused the application. According to the last census returns the population of the whole middle island of New Zealand is only 344,913, and this population is spread over an area rather more than that of England and Wales. A large portion of country is devoid of railway communication and badly provided with roads." Indeed, the report goes on to state that it may fairly be doubted whether the source of supply to the Dunedin Hospital would much, if at all, exceed 120,000, a smaller number than the actual number of patients treated at one London hospital alone—viz., St. Bartholomew's, with 156,000 patients annually. Again, considerably less than 1000 inhabitants are treated annually at the Dunedin Hospital and from a recent return only 1384 out-patients, with a daily average of 80 patients. Now anyone who has any experience in the charge of a New Zealand hospital under the present charitable aid system will admit that three-quarters of the cases which fill the wards of our hospitals would not be admitted into those of any London hospital, and a still smaller number of these would be of any value from a clinical point of view for teaching purposes. The report then compares these figures with some of the provincial schools at home and winds up under this heading with the powerful statement in support of the above argument that at Addenbrooke's Hospital at Cambridge, where there are 120 beds and where the scientific teaching staff is unsurpassed in the kingdom, and although able to boast of admirable clinical teachers, yet its students go to London for their clinical work. Secondly, that the facilities for teaching morbid anatomy and practical midwifery can scarcely be said to exist. Thirdly, that it is impossible for a small staff composed of busy general practitioners to devote the necessary time to clinical instruction. The report then goes on to affirm "that enough has been said to show how utterly inadequate are the facilities offered by the Dunedin school to enable a student to attain that degree of practical knowledge which will qualify him to practice his profession with safety to the public. Assuming, however, that it is desirable, which we do not admit, to grant degrees in the colony, and that the practice will be continued, then your committee has to report that the present system of examination is wrong in principle and dangerous in practice. For the first and second, and a portion of the final, examinations the students are examined by their own teachers. This gives the public no guarantee that a proper standard has been attained. Without imputing any *mala fides* to the gentlemen who act in the dual capacity of examiners and teachers, it may fairly be said that in a small community they may often be placed in positions very embarrassing to themselves. It is clear that such an examination, however fairly and honestly conducted, is only a guarantee that the student is acquainted with the personal views of his teachers. Again, in the final examination in some subjects the teacher examines conjointly with an outside examiner. We are of opinion that certainly in the three main branches of medicine, surgery and midwifery, and preferably in all other subjects, the examinations, as is the usual custom at home, should be conducted by independent examiners, and that the teacher should take no part beyond being present to watch the interests of his pupils." This report recalls the very unfortunate diversity of opinion which occurred last year in connexion with the final examinations of the New Zealand University held at Dunedin. Dr. Cahill, of Wellington, was appointed as an examiner in surgery conjointly with Dr. Brown of Dunedin, who held the professorship of surgery to the medical school connected with the Dunedin Hospital. There were six candidates for medical degrees. One of these satisfied all the examiners and two were rejected. The three remaining students satisfied all the examiners with the exception of Dr. Cahill. Dr. Brown considered the three candidates to have given satisfactory evidence of their surgical knowledge, while Dr. Cahill could not be shaken in his opinion. As a result of this the examination papers as sent in by the candidates, together with details of the oral and clinical examination, were, with Dr. Cahill's consent, submitted to the full board of examiners. At this meeting there were present Dr. Fell (in the chair), Dr. Cahill, Dr. Brown, Dr. Colquhoun, Dr. Ogston and Dr. Jeffcoat. It was the opinion of all these gentlemen, with the exception of Dr. Cahill, that the three candidates had satisfied them that they had a sufficient knowledge of surgery to entitle them to a pass. Dr. Cahill would not give way, and thus as far as the surgical part of the examination was concerned a deadlock occurred. Now the trouble began. At a meeting of the senate held at Wellington it was resolved "that as the examiners in surgery had failed to agree the examination in that subject be reopened and fresh examiners be appointed for it." Dr. Cleghorn and Dr. Martin were selected and after a searching examination declared that they were satisfied as to the surgical attainments of these candidates and presented them with the diplomas of M.B., B.Ch. of the New Zealand University. Dr. Cahill protested against this action of the senate in ordering a special examination under the general circumstances and more especially as the Chancellor of the University had originally appointed him as the "outside examiner" in surgery for the year 1892. An editorial article appeared in the July number of the *New Zealand Medical Journal* setting forth all the minor details of this most unfortunate disagreement. It is a matter of great regret that certain portions of this article were not omitted.

Inglewood, New Zealand, Dec. 29th, 1893.

Obituary.

PROFESSOR WILLIAM LEISHMAN, M.D. GLASG.

GLASGOW is to-day very much the poorer through the loss of one of her most dignified, eloquent, and genial sons, while all old Glasgow students, wherever they may be, will be saddened by the news of the death of Professor William Leishman. About eighteen months ago he became unfit for his usual teaching work through the development of a brain affection, but lately so much improvement was observed in his condition that hopes of ultimate recovery were raised; quite recently, however, he relapsed, and died on Sunday, Feb. 18th. Dr. William Leishman, who until recently held the appointment of Regius Professor of Midwifery in the University of Glasgow, was born on June 8th, 1834, his father having been parish minister of Govan. He was a distinguished *alumnus* of the University of Glasgow and graduated as M.D. with honours in 1855. Starting practice in Glasgow afterwards, he rapidly attained professional distinction and for a number of years acted as physician to the Royal Infirmary and Maternity Hospital and as a Lecturer on Medical Jurisprudence at Anderson's College. He held many local appointments. At one time he was surgeon to the prison of Glasgow, and among his other offices was that of examining physician to the Scottish Amicable Insurance Company. He had a very extensive consulting practice as a physician-accoucheur. In 1868 he succeeded Dr. Pagan as Professor of Midwifery in the University of Glasgow and discharged the duties of his chair in an admirable manner. He was an ideal lecturer; his voice was clear and full, and his remarks were polished and cultured. Moreover, he had a thorough and comprehensive grasp of his subject, and from his accurate knowledge of German and French he was in touch with the opinions and researches of continental authorities in midwifery and gynæcology. After contributing several valuable papers to various medical journals, Dr. Leishman, in 1870, published his book, "A System of Midwifery." This work at once attracted attention, for it was a model of perfect English and showed that its writer had read largely and had striven to come to a just decision wherever there might be two sides to a question. Indeed, it was characteristic of the man who wrote it, for he was eminently fair and candid and liked to look at a subject all round before he expressed an opinion favourable or the reverse. His book is justly considered a standard one and has reached a fourth edition in this country, while three editions have been sold in the United States.

Though eminent as a professor and as a writer, yet we

think that Dr. Leishman excelled even more as a public man in the discharge of his duties in the General Medical Council, in the University Court, and in the Senate of his university. In 1886 he was appointed representative of the University of Glasgow in the General Medical Council and soon came to be one of the most respected and influential members of that body. He was an active member of the Education Committee, and on the resignation of Professor Struthers he was elected to be its chairman. On questions of medical education generally and on education in obstetrics he always spoke with precision and authority. Where his own university was concerned he was, as in duty bound, always ready to defend her interests; but even here he acted with much dignity and good sense. He spoke with much clearness and force, but always with consideration and courtesy, to those from whom he differed. The notice of his retirement in November last was received with great regret by the Council, by whom he was regarded as one of the ablest and wisest among their number. As a member of the University Court he took a broad and liberal view of any subject which came before it for consideration. His knowledge of Scottish university matters was so patent that the University Commissioners modified certain of their ordinances in deference to his opinions. By his colleagues on the Senate his judgment was felt to be one that could be trusted on all occasions; it was upright, sound, and safe. Hence he became, not merely to the medical faculty but to the Senate as a whole, a wise and trusted leader, and in times of difficulty a guide of rare ability and conspicuous success. His students, and others who had the privilege of intimate association with him, will feel their loss keenly; they will remember his unostentatious, yet dignified, demeanour, his eloquent and scholarly diction, and his singularly clear and lucid presentation of a subject to his hearers. He was the worthy recipient of many honours, particularly as member of, and high office-bearer in, numerous professional societies, and for many years he held an unrivalled position as consultant in his own department of practice in the west of Scotland. Dr. Leishman left Glasgow for Paris in perfect health at the end of July, 1892, and while awaiting the arrival of his son, who was coming home on sick leave from India, heard of the death of his friend and colleague, Sir George Macleod. This intelligence was suddenly and abruptly conveyed to him, and the shock he sustained resulted in a cerebral seizure, from which he never thoroughly recovered. During the last three months his condition, as we have said, improved considerably, and he was able to take walking exercise and to converse with friends in his usual happy manner; at the beginning of last week, however, grave symptoms appeared, and he died on Feb. 18th at Fairy Knowe, Blairmore, his Clyde residence. His death is deplored not merely in university circles, but by all who knew him even by repute. To those who were intimate with him his loss is a severe blow. It has left a gap which cannot be filled, for in hours of relaxation he was the most genial of companions and in times of trouble a warm-hearted and sympathetic friend. He is survived by his wife, a son (a surgeon-captain in the army), and three daughters.

The following graceful tribute to his memory, elicited from Professor Gairdner by an appreciative and kindly obituary notice in the local press, appeared in last Tuesday's *Glasgow Herald*: "I should be glad to be allowed to add a few sentences to the generally true and kindly remarks to be read in the *Herald* to-day as regards one whom all his colleagues will remember with respect and affection as alike devoted to the university which he served and to the profession which he loved. Dr. Leishman, especially in later years, gave a great deal of time to public work in the General Medical Council, in the University Court, and in the Senate. He was almost an ideal councillor, as we knew from the words of sincere sympathy spoken by Sir Richard Quain in connexion with his retirement from the first of these positions; but it was necessary to have lived and worked alongside of him for a number of years to learn the secret of his combined strength and suavity. It was not at all because Dr. Leishman disliked or was afraid of controversy that, as you remark, his words were usually, if not always, on the side of peace and harmony, and yet carried great weight; it was because they carried great weight and were always kept studiously free from personal considerations that they tended, on the whole, in the direction of peace and amity. He liked to look at a subject all round, and to see what was reasonably to be said on every side of it. He had strong convictions—personal, political, and academical—and never hesitated in expressing them; but he was entirely above, and incapable of, the exaggerations that spring from a heated and ill-considered partisanship. Hence among his colleagues his judgment was felt to be one that could be relied upon in all circumstances. It was safe, and in the main conciliatory, without being weak or colourless. And even his enemies (if he had any) must at once have come to know that here was a man whom it was of no use to try to fight with the weapons of detraction and abuse, because he not only did not use these himself, but surrounded all his words and his doings with an impersonal atmosphere against which such venomous shafts fell powerless, because the man himself was invulnerable in his sense of duty and public spirit. He was, in short, a strong man and a wise one in dealing with subjects which he thoroughly understood, and he rarely went beyond these. And yet, as all his intimate friends well knew, he was a large reader of much and varied literature, both English and foreign, and especially French and German; and all his conversation was thus full of the suggestiveness that comes only of a high culture and great activity of thought upon many and varied problems. As an individual member of the Senate much in contact with my now departed colleague, I feel that there is no one to whom we all owed more, or who more ably and fully reflected the intelligence and maintained in a more dignified manner the interest and character of the university, than Dr. Leishman. There was in him a great store of loyalty as well as of 'sweet reasonableness' which never failed to assert itself at the right time and usually carried the convictions of all who were capable of being convinced by argument."

WILLIAM WILLIS, M.D. EDIN., F.R.C.S. ENG., M.R.C.P. LOND.

WE regret to have to announce the death of Dr. William Willis, which occurred at his home, Florence Court, county Fermanagh, on Wednesday, Feb. 14th. He was born in 1837 and obtained his doctorate at Edinburgh in 1859. After holding the post of house physician at the Middlesex Hospital, he in 1861 went out to Japan with Colonel St. John Neil's mission, where he had many signal opportunities of rendering useful service to the foreign residents there, and of assisting his Government in maintaining friendly relations with that country by volunteering for gratuitous services in the field at great personal hazard and with most successful results. At the end of 1868 he was lent to the Japanese Government at their special request, with the object of establishing a hospital and medical school at the capital, and later he resigned his appointment in Her Majesty's service in order that he might devote himself to the same good work in the interior of the country. His late chief, Sir Harry S. Parkes, K.C.B., in a letter written in 1882, said: "My intimate acquaintance with Dr. Willis for a period of nearly sixteen years enables me to speak with confidence both as to his professional skill and private worth; and I consider it to be only due to him to state that the cause of humanity and the progress of scientific medicine in Japan have been materially aided by his able and long-sustained exertions." For his services to the wounded of the Mikado's army Dr. Willis received the thanks of the Japanese and English Governments, as also the Mikado's unique present of Imperial brocades, an honour conferred then for the first time on a European and a commoner. He held for some time the important post of Vice-Consul at Yeddo, a position which his great tact and genial disposition enabled him to fill most successfully, and as a token of esteem the Japanese have determined to erect a statue to him in the public park of Kagoshima, the bulk of the subscribers being native medical men who began their professional life as students under him. On leaving Japan permanently in 1882 Dr. Willis practised for some time in Monmouth in partnership with his brother. In the previous year he had taken the Fellowship of the Royal College of Surgeons of England. In 1885 he accepted a fresh post from the Foreign Office, that of physician to Her Majesty's Legation at Bangkok, Siam. Besides starting a public hospital for Europeans, he had a large private practice in Bangkok and counted among his patients the King himself and his brother Prince Devawongze, who on his leaving presented him with portraits as well as autographs of the Princess and himself. He returned to Europe in December, 1892, on account of his health, which had become somewhat impaired by long residence in unhealthy climates. He was much in Monmouth

and London, visiting his old friends and following fresh developments of European science, and took as recently as last year the Diploma of Public Health of Cambridge.

AGOSTINO CARMELO, M.D.

THE steady-going British practitioner, living under a well-ordered Government and the tradition of settled law, may have some difficulty in appreciating the ordeal through which so many of his Italian professional brethren have had to pass, brought up, as all of the last and many of the present generation of them have been, in an "atmosphere of revolution." Such was the fate of the able, accomplished, and exemplary physician whose name appears at the head of this notice. Agostino Carmelo was a native of Mammola, in the Neapolitan territory, and was born in 1824. His father Vincenzo was a much esteemed practitioner in those parts and sent his son Agostino to qualify at the university of Naples for the paternal career. The young student distinguished himself at every stage of his course and graduated with honours in medicine and surgery. He was especially proficient on the clinical side of the profession and was rapidly rearing on such experience the reputation of a successful consultant when the political troubles that visited all the absolutist monarchies in Europe appeared with exceptional intensity in the Kingdom of the Two Sicilies. Dr. Carmelo, then only in his twenty-fourth year, was an inmate of the house of Poerio, the celebrated Neapolitan patriot, and sympathised to the full with the dauntless and enlightened Liberalism of his host. Like so many others of his age, standing, and profession, he became a marked man in the eyes of the Government, was arrested, and endured for years the horrors of those dungeons under the Royal Palace which were, in 1851, held up by Mr. Gladstone to the execration of the civilised world. Released after unheard-of privations and sufferings, he set himself, with all the best of his compatriots, to bring about a revolution in what the English statesman had truly called "the negation of God on earth." He took an active and effective part in the great events led up to by the genius of Cavour, distinguished himself in the campaigns of 1859–60, and on the absorption of the Neapolitan kingdom into that of Italy he was rewarded by his fellow citizens with promotion to the office of syndic in his native town. This he held till the unity and consolidation of Italy were assured, and he left, on his resigning the post, a reputation for integrity, for public spirit, and free-handed philanthropy which remains fresh to this day. Continuing his simple and laborious life as an Italian "Gideon Gray," he devoted what leisure he enjoyed to the furtherance of sound agriculture and the superintendence of the education of four grandchildren left orphans on his hands. But the constitution which had braved the prolonged agony of Neapolitan State prisons and had maintained itself unbroken through many a crisis on the stricken field showed latterly signs of failing. Retirement from active professional duty and recourse to the "lettered ease" which few contemporaries were better fitted to enjoy postponed but for a brief space the "inevitable hour." He died on the 13th ult. and on the following day received the tribute of a public funeral, attended from far and near by all classes of the community.

CASIMIRO SPERINO.

ANOTHER light has been lost to the medical world in Casimiro Sperino, who died at Turin on the morning of the 12th inst. in his eighty-second year. He was born on Aug. 31st, 1812, at Scarnafigi, in the province of Cuneo, Italy, and matriculated as a student of literature in the University of Turin. An ardent nature, endowed with bright intelligence and glowing with love of his fellow man, he was irresistibly drawn to the healing art and in due course graduated in medicine and surgery, with the highest honours in both. He made a specialty of eye diseases and was already an esteemed consultant in that branch when, on Jan. 1st, 1838, he opened an ophthalmic dispensary, mainly for the poor, among whom he did such excellent work that the Church became a steady supporter of his charity, while the Grand Almoner of King Charles Albert contributed a yearly donation of 2000 lire (£80). The dispensary—now really a hospital—throve apace, the citizens of Turin, touched by the self-denying devotion of its founder, and proud of his triumphs as an operator, contributing generously to its aid and adding to its resources by every kind of largess. In 1851 the government and superintendence of the institution were entrusted to a Società di Beneficenza, and under such auspices it developed still further till its resident staff, with Sperino at their head, made its reputation as an ophthalmic school quite European. Not only Italian surgeons of the first rank, such as Bottini of Pavia, spoke and wrote in its praise, but no less a man than von Graefe of Berlin referred to it as honourable alike to its founder and to the sub-Alpine school. All this is the more admirable when we recall the times in which Sperino's manhood was spent. Italy was then in the throes of revolution, and no sons of hers were more helpful in her cause than her physicians and surgeons. A Liberal "of the old rock," Sperino became the fast friend and able coadjutor of Cavour and D'Azeglio, and after the country's unity and independence had been secured he sat in the seventh legislature for the constituency of Fossano. After the seat of government had been transferred to Rome in 1870, he represented successively Savigliano and Cuneo till June 20th, 1883, when, by King Humbert's desire, he was made a senator. During all his career in the Lower House he sat in the Left Centre, and under the administration of Cavour he compiled the first sanitary *regolamento* for the kingdom—a masterly piece of legislation which bears the signature of Cavour himself. He was frequently a member of Parliamentary commissions, mainly hygienic and educational, and was esteemed by successive Prime Ministers of all parties as an invaluable auxiliary in domestic legislation. This useful work was achieved without prejudice to his career, professional and academic. He had placed himself in the first rank of Italian ophthalmic surgeons when he turned his attention to skin diseases, chiefly in their syphilitic aspect. He was elected to the chair of Dermosyphilopathy in the University of Turin, with charge of the corresponding clinique, and he made notable innovations in the treatment of that group of diseases. He was a strenuous advocate of syphilisation, on which, besides occasional articles in the local medical journals, he published his celebrated treatise, "La Sifilizzazione Studiata qual Mezzo Curativo e Preservativo delle Malattie Veneree" (Syphilisation studied as a Means for Curing and Preventing Venereal Diseases) (Turin, 1853). The controversy aroused by this publication became European, and the columns of THE LANCET were opened to the arguments *pro* and *contra* advanced by its defenders and assailants; but the profession were not long in coming to a conclusion as to the medical, if not the moral, side of the question, thus given by an authoritative French writer: "La syphilisation a été justement repoussée en tant que méthode prophylactique; en tant que moyen thérapeutique elle a été repoussée comme plus dangereuse qu'utile en face des moyens de guérison de la syphilis que possède l'art médical. Mais, au point de vue de la science, l'immunité contre de nouveaux chancres, malgré un coït impur ou l'inoculation, est démontrée par les expériences de Bœck et de Sperino." His activity in this field, however, did not interfere with his studies and his practice in opthalmology, and accordingly, nine years after the publication referred to above, he gave to the world his great treatise, "Études Clinicales sur l'Evacuation répétée de l'Humeur Aqueuse dans les Maladies de l'Œil. Rédigées avec le concours du Dr. Charles Reymond, Assistant de la Clinique" (Turin, 1862).

In 1883, as already stated, he was promoted to the rank of Senator of the Kingdom of Italy, and in the following year his alma mater and the city of Turin celebrated with unusual pomp and circumstance the anniversary of his fiftieth graduation day. This jubilee demonstrated the esteem and affection entertained towards him not only as a teacher and consultant but as a citizen and public benefactor—esteem and affection which continued to deepen and to spread until on Monday, the 12th inst., he succumbed, full of years and honours, to severe bronchial catarrh. On that day the University of Turin was closed in testimony of sorrow, and on the following day his remains were attended by a vast number of professional men and citizens to the Campo Santo, where the customary *oraison funèbre* was pronounced over him by his colleague, Dr. Tibone, Professor of Gynæcology in the sub-Alpine School.

THE SANITARY INSTITUTE.—The council of this institute have accepted an invitation received from the Lord Mayor and citizens of Liverpool to hold their next congress and exhibition in that city in the autumn of this year.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At a congregation held on the 16th inst. the following degrees were conferred:—

Bachelors of Medicine.—William Nicolls, Peterhouse; John Aldren Wright, non-collegiate.

Bachelors of Medicine and Surgery.—Herbert Pulford, Trinity; Francis Carr Bottomley, Joseph Blumfeld, Arthur Maurice Colcutt, Gonville and Caius; Arthur Martin Mitchell, Queen's; Wordsworth Poole, St. Catharine's; Hugh Milton Stewart, Christ's; William Reginald Grove, Sidney-Sussex.

UNIVERSITY OF DUBLIN.—The following degrees were recently conferred:—

Bachelor in Medicine.—Wilshaw W. Grosvenor.

Bachelor in Medicine, Surgery, and Obstetrics.—William Radcliffe Fenton, George Gilbert Fleming, Edmund George Forrest, Albert Victor Geoghegan, Robert Morton Hewit, James Jackson, Christopher Archibald Johns, John Lumsden, Frederick Faber MacCabe, James Stevenson Morton, John Pringle, L. Fergus Smith, Gordon Moffat Thompson, David Faris Walker (8 Ch., stip. cond.).

Doctor in Medicine.—Edward Barrington Ffennell, John Myles (in absentia), Charles W. Hamilton Richard Auchmuty Shekleton (in absentia), Gardiner William Trouton.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following foreign practitioners are announced:—Dr. Rembry of Menin, Belgium, who, in addition to being a distinguished practitioner, was a well-known writer, dealing especially with historical subjects.—Dr. Manouvrier, one of the oldest and most respected practitioners in Hainault, who was seized with apoplexy while writing a prescription for a patient.

ÆSCULAPIUS LODGE OF FREEMASONS.—An ordinary meeting of the Æsculapius Lodge was held at the Café Royal, Regent-street, on the 14th inst., the W.M., F. Ernest Pocock, M.D., presiding. James Startin, M.R.C.S., and H. J. Sharpe, M.R.C.S., were duly elected joining members. H. W. Nix, B.A., M.B., B.C. Camb., M.R.C.S. Eng., and J. R. Bosworth, M.R.C.S. Eng., L.R.C.P. Edin., were admitted into Freemasonry. Ten guineas were voted to the Royal Masonic Institution for Boys. The W.M. announced that the Grand Chapter had granted the petition for a Chapter in connexion with the Æsculapius Lodge, to be called the "Æsculapius Chapter," which will be consecrated at an early date. The members, together with a number of visitors, afterwards dined together and spent a very enjoyable social evening.

FOREIGN UNIVERSITY INTELLIGENCE.—*Florence.*—Dr. Chiara, Professor of Midwifery and Gynæcology, has retired with the rank of Emeritus Professor. Dr. Staderini has been recognised as *privat-docent* in Anatomy, and Dr. A. Toti as *privat-docent* in Laryngology and Otology.—*St. Petersburg.*—Drs. Ketcher and Kudraievski have been recognised as *privat-docenten* in Medicine.—*Vienna.*—Drs. H. von Hebra and F. Mracek have been promoted to Extraordinary Professorships of Dermatology and Syphilis. Dr. J. Schaffer has been appointed Extraordinary Professor of Histology.—*Budapest.*—Dr. Béla Angyán has been promoted to an Extraordinary Professorship of Abdominal Diseases.—*Odessa.*—The establishment of a medical faculty, which has long been projected, has at last been definitely decided on.

THE STATE OF THE REGENT'S AND GRAND JUNCTION CANALS.—The recommendation of the Public Health and Housing Committee of the London County Council that a copy of their report with reference to the condition of the Regent's and Grand Junction Canals be sent to each of the sanitary authorities concerned was considered at a recent meeting of the Council. Dr. Collins, on behalf of the General Purposes Committee, moved: "That the recommendation be referred back with a view to the committee considering and reporting more fully whether action cannot be taken under the Public Health (London) Act, 1891." The proposal to appeal to local authorities was, he thought, a very lame one, as those bodies had been deaf to the numerous complaints that had been made during the last sixty years. This amendment was defeated, but on the motion of Mr. Lloyd an amendment to the effect that the opinion of counsel be taken whether it would not be competent for the Attorney-General, if called upon by the Council, to proceed by public indictment against the Grand Junction and the Regent's Canal Companies for creating a public nuisance by their neglect of the proper management of their canals and basins within the metropolis was carried by twenty-nine votes against eight.

ROYAL UNIVERSITY OF IRELAND.—The following appointments have been made: Dr. J. Walton Browne, Assistant Examiner in Ophthalmology; Dr. John Byers, reappointed Examiner in Midwifery and Diseases of Women and Children; Dr. W. H. Barrett, Examiner in Pathology; and Dr. W. Whitla, reappointed Examiner in Materia Medica and Therapeutics. Dr. J. Symington has been appointed a Medical Fellow (Anatomy), and E. A. Letts, D.Sc., has been reappointed a Fellow in Chemistry at the same university.

EXHIBITION OF METEOROLOGICAL INSTRUMENTS.—An exhibition will be held from April 10th to 20th at 25, Great George-street, S.W., of meteorological instruments, and photographs and drawings relating to the representation and measurement of clouds will be exhibited; the committee, who are anxious to obtain as large a collection as possible of exhibits possessing a meteorological interest, invite the coöperation of all who possess objects of interest of this description and will be also glad to show any new meteorological instruments or apparatus invented or first constructed since the exhibition in 1892. Intending exhibitors should communicate with the Secretary, furnishing him not later than March 12th with a list of the articles they will be able to contribute and an estimate of the space they will require.

COMPLIMENTARY DINNER TO PROFESSOR MURDOCH CAMERON.—On the 14th inst. the medical practitioners of Glasgow invited Professor Murdoch Cameron to a congratulatory dinner in recognition of his appointment to the chair of Midwifery at the Glasgow university. Professor Cleland, as a member of the Senate, presided, and in the course of his remarks, which elicited much applause, he paid a high and deserved compliment to the professional accomplishments of their guest, of whom, said the chairman, Glasgow had great reason to be proud. Professor Cameron, in responding to the mark of confidence thus paid him, mentioned the names of many distinguished professors of medicine and surgery whose researches and achievements in their respective domains, as well as in the allied sciences, had reflected lasting honour on their school and conferred permanent benefit on the human race.

YORKSHIRE BRANCH OF THE MEDICAL OFFICERS OF HEALTH SOCIETY.—A meeting of this branch was held on the 15th inst. at the Hull Town-hall, under the chairmanship of Dr. Whitelegge. The mayor of the city having entertained the members of the branch at luncheon, a visit was paid to the Humber hospital-ship, after which a meeting was held in the council-chamber of the town-hall. After the election of twenty-one new members had been gone through Dr. Spottiswoode Cameron of Leeds read a paper on Methods of Disinfection adopted in that city, which was followed by a short discussion. Dr. Kaye of Huddersfield then brought forward a paper on the Prevention of Infection among School Children. In his remarks he expressed the opinion that early notification was the best preventive of disease and should be universally enforced. Dr. Johnstone of Ilkley followed with a paper on Isolation at Home and in Hospital, which elicited a rather animated discussion.

ROYAL METEOROLOGICAL SOCIETY.—The monthly meeting of this society was held on Wednesday evening, the 21st inst., at the Institution of Civil Engineers, Westminster, Mr. R. Inwards, F.R.A.S., President, in the chair. Dr. J. Cleasby Taylor read a paper on the "Temperature, Rainfall, and Sunshine at Las Palmas, Grand Canary," giving the results of his observations during the five years 1889-93. The mountain peaks (he said) rise to a little over 6000 feet and are about twenty miles from the coast. The diurnal range of temperature fluctuates considerably with the variations in wind and sunshine. With a southerly wind (which usually dies down at sunset) the range is increased, but the greater part of the increase is due to a higher day temperature. With northerly winds persisting after sunset the range may be very slight, particularly if the day has been cloudy. The sea temperature is dependent on causes outside the limits of the archipelago; local pressure or absence of sunshine does not cause any difference. A boisterous northerly wind, with a high sea, may cause the temperature to fall quicker than usual, or, if the temperature is rising, to check the rise, but any sudden variation is very rare. The rainfall is not great, though it is spread over a large number of days, the average yearly amount being 3·90 inches. The greater part of the rain falls during October and up to January, while the period from June to September is practically rainless.

ROTTEN EGGS IN CONFECTIONERY.—The recent disclosures regarding the use of rotten eggs in confectionery, a subject on which we briefly commented in our issue of the 10th inst., have evidently stirred up the authorities, since two cases are reported this week in which a large number of rotten eggs, kept for the purpose of sale by bakers, were seized by the sanitary inspectors. The fines inflicted were in the one case £10 and £1 1s. costs, and in the other £5 and costs.

AN INFECTIOUS DISEASES HOSPITAL FOR CRIEFF.—A few days ago the Board school of Crieff had under consideration the propriety of accepting the offer of Dr. and Mrs. Meikle to hand over to the town council the hospital they were erecting. The question was whether it would be advisable to close with the offer, as the building was situated very near the Board school of the town and was intended to be used as an infectious disease hospital. After considerable discussion it was agreed to refer the matter to the health committee, which in its turn sought the advice of Dr. Littlejohn. The offer of Dr. and Mrs. Meikle was accepted, and thanks were voted to the generous donors.

LEEDS AND NOTIFICATION.—The town council of Leeds have at last, by 25 votes against 21, decided to adopt the Infectious Diseases (Notification) Act, 1889. Twice before has a proposal to adopt this Act been discussed by the council, only to suffer defeat, and even now it has but narrowly escaped a similar fate for the third time Some of the arguments in favour of notification were, with the assistance of figures from the medical officer of health, ably put before the council by the chairman of the sanitary committee. It is, however, unnecessary to reproduce them here. The debate which followed the proposal is in many ways instructive One member of the council gave it as his opinion that the improvements which in other towns had been attributed to notification, were in reality the result of improved sanitation, and he attested that the medical officer of health was able to learn of the existence of infectious disease as quickly without the Act as with it; in fact, he objected to give "that officer and his satellites any more power." Another member pointed out that from the standpoint of vital statistics, Leeds occupied the fourth place among our large towns, and he expressed a doubt whether if notification were adopted the city would not at once sink to sixth on the list. Finally, the contention was brought forward that the Act would "terrorise the people." The adherents of notification owe a debt of gratitude to the medical profession of Leeds for having appointed a deputation to urge upon the council the desirability of adopting the Act.

Parliamentary Intelligence.

THURSDAY, FEB. 15TH.

London Charities.

MR. HOWELL wished to know when the return of the trustees as to London charities, which had not up to the present been forthcoming, would be ready for issue to the members of the House.—Mr. T. Ellis said the return referred to would be available not later than the 28th inst. With regard to a further question by the hon. member for Bethnal-green as to whether it would be possible for the Government to grant a further return, to include the names of the trustees who had within the last five years failed to render their accounts as provided by statute, Mr. Ellis said that the Government were unable to undertake the work.

FRIDAY, FEB. 16TH.

Small-pox and Vaccination.

Sir Walter Foster, replying to a question put by Mr. Hopwood on this subject, said that with regard to the children whose births were registered in 1889, the facts with respect to vaccination were stated in the report of the medical officer of the Local Government Board for 1891. A summary of similar returns up to Jan. 31st, 1892, was published in the annual report of the Board last year; but the details of that report had been delayed, but were now passing through the press. The statistics concerning the mortality from small-pox in 1891 were given in the fifty-fourth report of the Registrar-General, and those for 1894 would be issued at an early date.

High Death-rate on Training Ships.

Mr. Arnold Forster drew the attention of the Secretary to the Admiralty to the high mortality occurring on board H.M.'s ships *Impregnable* and *Lion* as compared with that recorded in other training ships.—Sir U. Kay-Shuttleworth said that to obtain correct conclusions it was necessary to take the average number of sick on board and the ratio of sick per 1000. On that basis it would be seen that though there were in 1892 some serious cases resulting in death on both ships, the healthiness of the ships mentioned compared favourably with that of many other vessels, whether for training purposes or otherwise. As to the condition of health on board the ships in 1893, exact information was not yet available; but a general statement might be made that the measures taken to prevent overcrowding and to improve ventilation have served greatly to enhance the healthfulness of the vessels.

MONDAY, FEB 19TH.

The Contagious Diseases Acts.

Mr. W. M'Laren directed the attention of the Secretary of State for War to a letter addressed by the Duke of Cambridge to Generals commanding the different military centres, in which His Royal Highness alluded to the advantages derived by a district situated within the operation of the Contagious Diseases Acts when in force.—Mr. Campbell-Bannerman said the object of the letter referred to was not to favour the revival of the Acts in question, but to instruct general officers to co-operate with the civil authorities in giving effect to the powers conferred by the Criminal Law Amendment Act and the Licensing Acts for the purpose of improving the moral condition of garrison towns.

TUESDAY, FEB 20TH.

The London (Gresham) University Commission.

Sir A. Rollit asked if the recently published report of the above commission was authorised and when the report itself would be published.—Mr. Gladstone replied that the Government were not aware from what source the report was obtained, but believed it had been procured by some breach of confidence and an investigation was now being made into the matter. The report itself would be published very shortly.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ADAM, W. T., M.B. Glasg., C.M., has been appointed Medical Officer of Health for the Shelf Urban Sanitary District of the Halifax Union.

BANKS, WM., M.B. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the New Hospital and Dispensary, Falmouth.

BLACKLOCK, A. W., M.D. Aberd., C.M., has been reappointed Honorary Medical Officer to the Northern Counties Hospital for Diseases of the Chest, Newcastle-on-Tyne.

BULLMORE, W. K., M.D. St. And., M.R.C.S., has been appointed Honorary Medical Officer to the New Hospital and Dispensary, Falmouth.

CLARK, W. F., L.R.C.P., L.R.C.S. Edin., D.P.H. R.C.P.S. Lond., has been appointed Medical Officer for the Cheshunt Sanitary District of the Edmonton Union.

GRIFFITH, J. W., M.D. St. And., M.R.C.P. Lond., M.R.C.S., has been appointed Honorary Consulting Physician to the Finsbury Dispensary.

HARRIS, A. B., M.D. St. And., L.R.C.P. Edin., M.R.C.S., has been appointed Honorary Medical Officer to the New Hospital and Dispensary, Falmouth.

HARRISON, JAMES, L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer to the East Grinstead Cottage Hospital, vice Covey, resigned.

HOWIE, CATHERINE, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., L.M. Rotunda, has been appointed Clinical Assistant to the Glasgow Samaritan Hospital for Women.

HOWIE, JOHN COULSON, M.A., M.B., C.M. Glasg., and L.M. Rotunda, has been appointed Dispensary Physician to the Glasgow Samaritan Hospital for Women, vice Dr. John Brown.

HUNTER, JOHN, F.I.C., F.C.S., has been appointed Analyst to Banff County under the Fertiliser and Feeding Stuffs Act, 1893.

LANYON, G. E., M.B., C.M. Edin., has been appointed Honorary Medical Officer to the New Hospital and Dispensary, Falmouth.

LATHAM, HENRY, M.B., C.M. Edin., has been appointed Junior House Surgeon at the Stockport Infirmary.

LEVICK, H. D., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer for the Infirmary of the Whitechapel Union.

LIGHTBODY, J. H., M.D. Vict., Ch.B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Wybunbury Sanitary District of the Nantwich Union.

MAXWELL, RAYMOND, M.B., C.M. Edin., has been appointed House Physician to the Northern Hospital, Liverpool.

MOORE, E. H., L.R.C.S. Edin., has been appointed Honorary Medical Officer to the New Hospital and Dispensary, Falmouth.

MUSSEN, A. A., M.B., B.Ch. Dub., has been appointed Assistant House Surgeon to the Northern Hospital, Liverpool.

O'DEA, M., M.B., B.Ch. Irel., has been appointed Medical Officer for the Third Sanitary District of the Abingdon Union.

OLDMEADOW, L. J. H., M.B., C.M. Edin., has been appointed House Surgeon to the Northern Hospital, Liverpool.

OWEN, J. F. H., L.R.C.P. Edin., M.R.C.S., has been appointed Honorary Medical Officer to the New Hospital and Dispensary, Falmouth.

PEMBERTON, OLIVER, F.R.C.S. Eng., F.R.C.S. Edin., has been appointed Honorary Surgeon to the Birmingham Nurses' Training Institution.

PERCEVAL, FRANK, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent of the County Asylum, Whittingham, Preston, Lancashire, vice Wahis, resigned.

PHILLIPS, A. R., L.D.S.R.C.S. Eng., has been appointed Honorary Dental Surgeon to the New Hospital and Dispensary, Falmouth.

ROBERTS J. LLOYD, M.B., C.M. Edin., D.P.H. R.C.P.S. Lond., has been reappointed Medical Officer for the Abergele and Pensarn Urban Sanitary Districts.

SCOTT, A., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer to the Workhouse, Braintree Union, vice Eccles, resigned.

SMYTH, H J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Eleventh Sanitary District of the South Molton Union, vice Tate, resigned.

STUBBS, HENRY, M.R.C.S., has been appointed Medical Officer for the Madeley Sanitary District.

TAYLOR, D. M., M.B., M.S. Glasg., has been appointed Medical Officer to the Stepney Union Workhouses, vice Kennedy, resigned.

TURNER, F. J., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Blakesley Sanitary District of Towcester Union.

WADE, W. F., M.B., F.R.C.P. Lond., has been reappointed Honorary Physician to the Birmingham Nurses' Training Institution.

WALSH, MICHAEL, L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer to the Royal Irish Constabulary in the Counties of Wexford and Kilkenny.

WEAR A. T., M.D., Durb., L.R.C.P. Lond., M.R.C.S., has been reappointed Honorary Medical Officer to the Northern Counties Hospital for Diseases of the Chest, Newcastle-on-Tyne.

WOOD, W. DYSON, L.R.C.P., L.R.C.S. Edin., has been reappointed Medical Officer of Health by the Henley Town Council.

WORGER, T. H., M.R.C.S., has been reappointed Medical Officer of Health for Radstock.

WRIGLEY, R., M.R.C.S., has been appointed Medical Officer for the Runham Vauxhall Sanitary District of the East and West Flegg Incorporation.

YOUNGER, EDWARD GEO., M.D. Brux., M.R.C.P. Lond., has been appointed Physician to the Finsbury Dispensary, vice Griffith.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BACTERIOLOGICAL INSTITUTE, Cape Colony.—Medical Assistant. Salary £350 per annum, and the successful candidate will be provided with a free passage (first class) to the Colony. Applications to Mr. Chas. Louden, W.S., 54, Queen street, Edinburgh.

BELGRAVE HOSPITAL FOR CHILDREN, Gloucester-street, Pimlico, S.W.—House Surgeon. Board, lodging, fuel and light provided. Applications to Hon. Sec., 7, Victoria-street, Westminster.

BURY DISPENSARY HOSPITAL, Bury, Lancashire.—Junior House Surgeon. Salary £60 per annum, with board, residence and attendance.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c. Applications to the Secretary, at the office, 24, Finsbury-circus, E.C.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician, for six months. Board and residence, and allowance for washing provided. Applications to the Secretary, at the office, 24, Finsbury-circus, E.C.

CITY ORTHOPÆDIC HOSPITAL, Hatton-garden.—Honorary Surgeon, and two Assistant Honorary Surgeons.

CLAYTON HOSPITAL AND WAKEFIELD DISPENSARY.—Junior House Surgeon, unmarried. Honorarium £40 per annum, with board, lodging and washing.

COOMBE LYING-IN HOSPITAL, Dublin.—Assistant Master for three years. Premium to Master, £200. Applications to the Master, Coombe Hospital, Dublin.

CORPORATION OF CROYDON.—Resident Medical Officer for the Borough Isolation Hospital for Infectious Diseases. Salary £150 per annum, increased by £20 at the end of the first year, with board and lodging. Applications to the Medical Officer of Health, 7, Katharine-street, Croydon.

COUNTY ASYLUM, Prestwich, Manchester.—Assistant Medical Officer, unmarried. Salary commences at £100 a year, increasing to £200 by successive increments of £25, with apartments, board, attendance, and washing.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £100 a year, with prospect of an annual rise of £25 up to £200, with further increase according to promotion, together with furnished apartments, board, attendance, and washing.

COUNTY BOROUGH OF OLDHAM.—Medical Officer of Health for the Borough, and Medical Director and Attendant of the Infectious Diseases Hospitals. Salary £400 per annum. Applications to the Town Clerk, Town Hall, Oldham.

COUNTY LUNATIC ASYLUM, Snenton, Nottingham.—Assistant Medical Officer, unmarried. Salary £100 a year, rising £10 annually to £150, with board, lodging, washing, and attendance.

COUNTY OF NORTHUMBERLAND.—County Medical Officer of Health for three years. Salary £500 per annum, and travelling expenses. Applications to the Deputy Clerk of the Council, Moot Hall, Newcastle-on-Tyne.

FEMALE LOCK HOSPITAL, Harrow-road, W.—Assistant House Surgeon, for twelve months. Board and lodging provided.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer. Must speak French. Salary £80 per annum, with board, furnished rooms and attendance.

HOSPITAL FOR WOMEN (THE LONDON SCHOOL OF GYNÆCOLOGY), Soho-square, W.—Clinical Assistants.

JOINT COUNTIES' LUNATIC ASYLUM, Carmarthen.—Medical Superintendent. Salary £500 per annum, with unfurnished house, garden produce, fire, lights, and washing. Applications to the Clerk to the Visitors, Carmarthen.

LONDON COUNTY COUNCIL.—Lecturer on Sick Nursing, Hygiene, and "First Aid." Salary £100 per annum. Applications to the Secretary of the Board, Technical Education Board, 13, Spring-gardens, S.W.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Residence in the hospital, board, and washing provided, and an honorarium of five guineas on satisfactory completion of term of appointment.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon for six months. Non-resident. Salary at the rate of £50 per annum.

MANCHESTER ROYAL INFIRMARY (MONSALL FEVER HOSPITAL).—Assistant Medical Officer at Monsall Fever Hospital (unmarried) for twelve months. Salary £100 per annum, with board and residence.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer, at the Infirmary of the Convalescent Hospital at Cheadle, for twelve months, unmarried. Salary £150 per annum, with board and residence.

MARTLEY UNION.—Medical Officer and Public Vaccinator for the Knightwick, Alfrick, Lulsley, and Suckley Districts. Salary £50 per annum (payable quarterly) and the prescribed extra fees and statutory allowance for vaccination. Applications to the Clerk, 14, Foregate street, Worcester.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—Assistant House Surgeon. Salary £30, with board and washing.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Assistant House Surgeon. Board, residence, and laundry provided.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—House Surgeon, for one year. Salary, £100 per annum, with board and lodging.

SIR PATRICK DUN'S HOSPITAL, Dublin.—Honorary Assistant Physician in charge of out-patients. Applications to C. B. Ball, Esq., M.D.

Births, Marriages and Deaths.

BIRTHS.

ADDISON.—On Feb. 18th, at Westbourne, Tenterden, Kent, the wife of W. B. Addison, B.A., M.B., B.C. Cantab, M.R.C.S., L.R.C.P., of a son.

ABRAM.—On Feb. 17th, at London-road, Reading, the wife of G. Stewart Abram, B.A., M.B. Cantab., M.R.C.S., of a daughter.

CAHILL.—On Feb. 18th, at Seville-street, Lowndes-square, S.W., the wife of John Cahill, F.R.C.S., of a daughter.

DAVENPORT.—On Dec. 18th, at Chung King, China, the wife of Cecil J. Davenport, F.R.C.S., of London Mission, of a son.

HAKE.—On Feb. 12th, at Victoria-street, S.W., the wife of Dr. H. Wilson Hake, of a daughter.

LENNOX.—On Feb. 19th, at Nethergate, Dundee, the wife of David Lennox, M.D., of a son.

OWEN.—On Feb. 14th, at Crathorne, Teignmouth, S. Devon, the wife of Arthur D. Owen, M.R.C.S., Perak, Straits Settlements, of a daughter.

PRATT.—On Feb. 19th, at De Montfort House, Leicester, the wife of Reginald Pratt, M.D., of a daughter.

REYNOLDS.—On Feb. 19th, at 28, St. Saviourgate, York, the wife of H. W. Reynolds, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

REED-HILL.—On Feb. 2nd, at 29, Crouch-street, Colchester, the wife of W. Reed-Hill, M.B., Mast. Surg., of a son.

SHACKEL.—On Feb. 17th, at Ludlow, Salop, the wife of G. A. Shackel, L.R.C.P., M.R.C.S., of a son.

WOOLBERT.—On Feb. 11th, at Cotleigh-road, West Hampstead, the wife of H. R. Woolbert, M.B., F.R.C.S., H.M. Indian Medical Service, of a daughter.

MARRIAGES.

BATE—DUTTON.—On Jan. 16th, at St. Cuthbert's, Kensington, George Bate, M.R.C.S. Eng., L.S.A., late R.N., to Mary Anne (Annie), third daughter of the late Dr. James Dutton, of Hammersmith, W.

WHEATLY—BOWRING.—On Feb. 19th, at St. Mary's, Kensington, by the Vicar, the Rev. Bradshaw Foy, Arthur William Wheatly, M.B., to Alice, widow of the late John Fonnereau Bowring, of Coombe Royal, Kingsbridge, South Devon, and daughter of William Henry Mare of South Kensington.

DEATHS.

CLARKE.—On Feb. 16th, at Banbury, Thomas Clarke, M.R.C.S., aged 72.

CRAIGIE.—On Feb. 19th, at Bournemouth, James Craigie, M.D., Hoylake, Cheshire.

GREENSILL.—On Feb. 17, at The Firs, Martley, near Worcester, John Nicholas Greensill, M.R.C.S., aged 74. Friends kindly accept this intimation.

LEISHMAN.—On Feb. 18th, at Blairmore, William Leishman, M.D., Emeritus Professor of Midwifery in the University of Glasgow.

LUKE.—On Feb. 19th, at his residence, Hayes, Slinfold, Sussex, Henry Luke, M.R.C.S.

GRAHAM.—On Feb. 17th, at West Kensington, Sydney Dalton Graham, M.R.C.S., M.R.C.P., only son of Major-General J. M. Graham, Retired List Bengal Staff Corps.

NEWTON.—On Feb. 16th, at 85, Gloucester-terrace, Hyde Park, Edward Newton, F.R.C.S., aged 78.

SMITH.—On Feb 16th, at Point de Galle, Ceylon, H. L. BARTON SMITH, M.D., M.R.C.S., of 29, Charles-street, Berkeley-square, London, aged 45.

WILLY.—On Feb. 19th, at 9, Magdala-villas, Margate, Ambrose Willy, Esq., aged 76.

WILLIS.—On Feb. 14th, at Florence Court, county Fermanagh, William Willis, M.D. Edin., F.R.C.S. Eng., Physician to Her Majesty's Legation, Bangkok, Siam, aged 57.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, February 22nd, 1894.

	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Feb. 16	30·07	S.W.	43	42	58	49	39	0·01	Overcast
,, 17	30·16	S.E.	39	39	58	41	39	0·03	Raining
,, 18	30·24	E.	37	35	77	40	35	0·43	Bright
,, 19	30·54	S.E.	31	F.	71	39	29	—	Bright
,, 20	30·48	S.E.	31	F.	60	40	29	..	Hazy
,, 21	30·33	N.E.	30	F.	50	39	29	..	Foggy
,, 22	30·34	N.E.	32	F.	58	37	30	..	Foggy

Medical Diary for the ensuing Week

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.) St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.)

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Great Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St Peter's (2 P.M.), Samaritan (2.30 P.M.), Great Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-sq. (2 P.M.), North West London (2 P.M.)

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.) Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.)

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily

SOCIETIES.

MONDAY.—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Frederick Treves: Peritonitis. (Third Lettsomian Lecture.)

TUESDAY.—ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—Dr. J. W. Washbourn: Cases of Pleurisy caused by the Pneumococcus, and with Constitutional Symptoms resembling those of Pneumonia.—Mr. Arthur Symons Eccles: The Relationship between Disorders of Digestion and Neurasthenia (Dilatation of the Stomach, and Constipation).

WEDNESDAY.—HUNTERIAN SOCIETY.—8.30 P.M. Dr. Pye-Smith: Rational Therapeutics.

THURSDAY.—HARVEIAN SOCIETY.—8.30 P.M. Dr. J. F. W. Silk: On the Use and Abuse of Anæsthetics.

FRIDAY.—WEST KENT MEDICO-CHIRURGICAL SOCIETY (Miller Hospital, Greenwich).—8 P.M. Sir Dyce Duckworth: Some Points in the Diagnosis of Pain commonly called Gouty or Rheumatic.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital). 8 P.M. Special General Meeting to consider certain Alterations in, and Additions to, the Laws. 8.30 P.M. Clinical Meeting.

LECTURES AND ADDRESSES.

MONDAY.—LONDON POST-GRADUATE COURSE.—Royal London Ophthalmic Hospital, Moorfields, 1 P.M., Mr. W. Lang: Iritis.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Mr. G. Stoker: Post-nasal Growths and Enlarged Tonsils.—Bacteriological Laboratory, King's College, 3 P.M., Prof. Crookshank and Dr. Hewlett: Erysipelas and Suppuration.

TUESDAY.—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Percy Smith: General Paralysis of the Insane.

WEDNESDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton, 4 P.M., Dr. J. Kingston Fowler: Cases of Pulmonary Tuberculosis.—Royal London Ophthalmic Hospital, Moorfields, 8 P.M., Mr. A. S. Morton: Optic Neuritis.—Hospital for Skin Diseases, Blackfriars, 1 P.M., Dr. Payne: Alopecia, its Varieties.

WEST LONDON HOSPITAL (Hammersmith, W.).—5 P.M. Mr. Stephen Paget: Diseases of the Breast. (Post-graduate Course.)

LONDON SKIN HOSPITAL.—8 P.M. Dr. Sanctuary: Eczema, its Causes and Treatment.

THURSDAY.—LONDON POST-GRADUATE COURSE.—National Hospital for Paralysed, Bloomsbury, 2 P.M., Dr. Gowers: Clinical Cases.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Mr. Jonathan Hutchinson: Cases in the Wards.

FRIDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton, 4 P.M., Dr. J. Kingston Fowler: Cases of Valvular Disease.

SATURDAY.—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 11 A.M., Dr. Hyslop: General Paralysis of the Insane.

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to the Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

"FREE ADVICE COUPON."

To the Editors of THE LANCET.

SIRS,—I must ask you to give to this letter the same publicity which has been obtained for my name through criticisms in THE LANCET of the 17th inst. May I at the same time suggest to you the "sweet reasonableness" of inquiry into matters in which you are asked to lay down the law before condemning *by name*—unheard—the accused. Many of your contemporaries are given to this unfair and objectionable practice; the absence of this necessary editorial precaution has, in the memory of many, brought about loss of money to the proprietors, and, what is worse, loss of credit and repute to the papers. The facts are as follows:—As one of the Earl of Winchilsea's many admirers, I undertook a few weeks ago, *without reward and without hope of reward*, to answer questions in *The Cable* on hygiene and sanitation, it being considered that in this way I could, in a small degree at least, do something for a good cause. In my letter to the sub-editor I pointed out to him that only questions of general interest under the headings named were admissible; certain notices of me were inserted in *The Cable* without my knowledge, and certainly not with my wish. The headings and rules were also, with the best intentions and in utter ignorance of professional etiquette (and, I may add, of morbid professional jealousy), inserted by him. So many queries—all, I believe, from poor persons—came in that, at the wish of the sub-editor, a few were answered, until I could personally arrange the column as it is now and for some time has been, and, as far as I am concerned, shall remain, until my services cease to be of interest and use, or until I am convinced that I am doing a thing which men of properly balanced minds consider to be wrong. At this time I was confined to bed through serious illness and unable to attend to work for nearly three weeks. On my return to town the rules and regulations were at once placed on a footing on which they have been for some weeks; my name was removed, and, as I thought, everything done to satisfy the demands of all reasonable persons. In THE LANCET of the 17th inst. my name is vilified, weeks after the removal of the so-called "professional etiquette" pretext—a fact which will prove to the lay mind, and I hope to the minds of many of my fellow workers, either the culpable negligence of our leading medical paper or—malice.

I am, Sirs, yours truly,

Bedford-square, London, W.C., Feb. 19th, 1894. E. AUGUSTUS HARBORD.

*** We gladly insert Mr. Harbord's letter and accept his statement. We entirely disclaim any culpable negligence on our part, and we most certainly were not influenced by "malice." The publication in *The Cable* of Mr. Harbord's name and eminence we continue to disapprove, as he does, and we were not aware that the practice had been discontinued.—ED. L.

LADY MEDICAL STUDENTS.

ACCORDING to the *Revue Scientifique* the lady students of medicine at the Geneva University have not shown themselves to be possessed of those qualities with which some of the advocates of the equality of the sexes would have us believe they are endowed. During the last seventeen years 175 women were admitted at the medical faculty, among whom were 50 Polish ladies. Of these last only 4 completed their studies. It is not known what became of the others. Of the remaining 125 students, 10 took a doctor's degree, 2 left medicine altogether and married, 4 now gain their livelihood with great difficulty, and 3 have acquired a pretty good practice. The rest, 116 in number, are lost to sight.

Enquirer.—The question is eminently one which should be left to be answered by the medical officers attached to the hospital.

X.—We do not know any work which would tell a person "how to succeed in medicine."

SOME REMARKS ON THE DRUG TREATMENT OF INFLUENZA.

To the Editors of THE LANCET.

SIRS,—After having tried various plans of treatment in influenza, I find the following mixture to be very generally useful when the patient first comes under observation:—℞. Antipyrin, ʒiss; ammon. carb., gr. xl.; tr. chloroformi co., ʒiij.; aquam, ad ℥viij.; mince; ℥j. quartis horis. This usually relieves the pain markedly after two or three doses, lowers the temperature, and altogether makes the patient feel more comfortable, the carbonate of ammonia counteracting any depressing effect of the antipyrin. In addition I should say that I have been very much struck by the beneficial action which antipyrin seems to exert on various forms of sore-throat, including the pharyngitis often seen in influenza. In my influenza cases, when pain and swelling of the joints have been marked, 15-gr. doses of bicarbonate of potassium with the above mixture seem to act beneficially. As a rule, patients only require one mixture of the antipyrin. Then an attempt should be made to improve the secretions by giving a stomachic mixture—e.g., soda and gentian—when the tongue is coated, or an acid mixture when it is clean. This usually clears the way for a more tonic line of treatment such as strychnine, quinine, or iron, either alone or in combination. Insomnia may be combated by giving a grain of opium in pill form at bedtime and repeating in two hours if needful. For the paroxysmal cough occurring so frequently during convalescence nothing seems to be more efficacious than ʒj. or ʒiss. doses of syr. codeinæ, B.P.C., given occasionally, or the following:—℞ codeinæ, gr. iv.; acid. hydrocyan. dil., ♏xxiv.; vin. ipecac. and acid. hydrobromic. dil., *aa* ʒi.; tr. limonis, ʒiss.; glycerini, ʒvj.; aq. chloroformi, ad ℥vj.; misce; ℥ss tussi urgente sumend.

I am, Sirs, yours faithfully,
Woodhouse Hall, Leeds, Feb. 21st, 1894. W. G. SCARTH.

THE LATE DR. BILLROTH'S WORK ON SICK-NURSING.

To the Editors of THE LANCET.

SIRS,—Permit me to bring to your notice the fact that Dr. Billroth's great work on Sick-nursing, to which you refer in your obituary notice of the deceased professor on the 17th instant, is published in English as well as in the eight languages named. I had the honour to translate Dr. Billroth's great work into English and to publish it through Messrs. Low and Co. of Fetter-lane. The third English edition is now issued. An eminent medical friend of both Dr. Billroth and myself earnestly recommended me to make an English translation of this work, and Dr. Billroth gave me his special authority for the same and, on its completion, immediately expressed his high approval thereof.

I am, Sirs, yours obediently,
February 20th, 1894. J. BENTALL ENDEAN.

THE FONTANELLES.

To the Editors of THE LANCET.

SIRS,—Can any of the readers of THE LANCET tell me whether in any part of the United Kingdom there is any popular name for the fontanelles on the infant's head, and whether there are any traces of popular superstition in regard to their function? Ramsbotham says that their name arose from an old notion that a moisture distilled from the brain through the unossified apertures. What authority is there for this statement? He thinks that the Greeks had a similar notion when they called the fontanelle *bregma*. May not this, however, mean the part that remains soft?

I am, Sirs, yours faithfully,
February 20th, 1894. H.

TREATMENT OF TETANUS WITH ANTITOXIN.

To the Editors of THE LANCET.

SIRS,—A case of tetanus was admitted a few days ago into the West London Hospital under the care of Dr. Hunter and myself, and was treated with injections of "sérum antitétanique." Unhappily the case was a very bad one and ended in the usual way; and it is useless to publish a single case and impossible to feel sure that the alleviation of the boy's pain was due more to the antitoxin than to the rest of the treatment. But I wish to say that Dr. Roux has kindly sent me a fresh supply of the serum from the Pasteur Institute, and I shall be happy to send it, with the notes of the case, to any one of your readers.

I remain, Sirs, your obedient servant,
Wimpole-street, W., Feb. 21st, 1894. STEPHEN PAGET.

SUBSTITUTE FOR HORSE RIDING.

AN apparatus by which both the expense and difficulty of riding on a live horse are avoided has been on view for some days past to the medical profession. This invention consists of a saddle mounted on a stand, the interior works of which are so arranged that with a minimum of exertion on the part of the rider he may reproduce the trotting and galloping motions of a horse. Mounting astride of the horse the rider places his feet on supports at the sides, which can be raised to any level, and which correspond to stirrups in ordinary riding. In front of him are two handles, which can be also raised or lowered, thus bringing the muscles of the arms and chest into action. The whole saddle can be also raised or lowered, thus giving an easy trot or gallop at the will of the "horseman." The rider puts the horse into motion by his movements up and down. Thus the apparatus is different from the mechanical horse exhibited some years back, in which the horse was moved by a pivot in the centre of its body, which was worked by a steam engine beneath the floor. The experiment is very ingenious, but it will remain to be seen if the public will prefer the invention to genuine horse exercise in the open air, although obtained without risk and at less expense. The apparatus is to be seen at Messrs. Vigor's, 21, Baker-street, Portman-square.

Mr. John Gay.—We can only advise our correspondent to consult our advertising pages.

MEDICAL ETIQUETTE.

To the Editors of THE LANCET.

SIRS,—I was called suddenly one afternoon last week to a patient who had been confined on a sofa. After I had done everything necessary, I was told that another medical man had been sent for, who, after he came, allowed that the case was mine, and we parted. Judge of my surprise a few days later to find that he had not only been calling, unknown to me, on my patient, but actually prescribing as well for her, without informing me. When a medical man as old as one's father acts in this way, what is the good of preaching etiquette to junior members?

I am, Sirs, yours faithfully,
Hoxton-street, Feb. 20th, 1894. I. P. LLEWELYN.

PRECAUTIONS AGAINST POST-MORTEM WOUNDS.

To the Editors of THE LANCET.

SIRS,—For some years I have always used india-rubber gloves when engaged in making post-mortem examinations, having of late used a pair of ordinary driving gloves under them, and I find I am quite as much at ease with them during the most delicate manipulations as though my hands were unprotected. Although I found them rather cumbersome at first, after a time all this passed off, and I have the satisfaction of feeling that I am absolutely safe, and should I be called to a midwifery case at once I should not be a source of danger to my patient.

I am, Sirs, yours truly,
Guildford, Feb. 20th, 1894. GEORGE FISHER, M.R.C.S.Eng. 1867.

MORPHIA IN HEART DISEASE.

To the Editors of THE LANCET.

SIRS,—I notice that in the article on Mitral Stenosis reference is made to remarks by Dr. Barr on the pernicious influence of digitalis and the value of nitro-glycerine and atropine in the irregularity of cardiac action met with in that disease. I would seek to draw attention to the use of morphia in this connexion, which in my experience has been attended with very satisfactory results, and I have found that the beneficial action of digitalis may be obtained and its evil effects obviated by combining with it small doses of morphia.—Yours truly,

Oxford, Feb. 20th, 1894. J. MACLAGAN REID, M.B. Edin.

THE GREATEST CONSULTATION IN HISTORY.

THE following quotation is from an American medical contemporary:—

"The veracious daily press states that the mother-in-law of the Mikado of Japan has recently been ill. She was attended by 423 physicians, but in spite of that has pulled through. The 423 medical men hadn't much to say as to the cause of the lady's illness, but a Buddhist priest of ingenious mind declared that it was owing to the introduction of railroads. His logic was simple. Before there were railroads she was well. After there were railroads she was ill. What could be more clear than the conclusion he drew?"

During the week marked copies of the following newspapers have been received:—*Liverpool Courier, Daily Chronicle, Cork Constitution, Devon and Exeter Gazette, Morning, Hayward's Heath Herald, Southampton Echo, Workington News, Westmeath Examiner, Norfolk Standard, Worcester Journal, Kentish Express, Western Morning News, Morning Advertiser, The Times, Medical Record (New York), Health, South Wales Daily News, Leeds Mercury, Cheltenham Examiner, Bristol Mercury, Yorkshire Post, Cornwall Gazette, Goole Weekly Herald, City Press, Sanitary Record, Hertfordshire Mercury, Bradford Observer, Liverpool Daily Post, Reading Mercury, Weekly Free Press and Aberdeen Herald, Citizen, West Middlesex Standard, Southampton Times, Bedfordshire Times, Surrey Advertiser, Local Government Journal, West Middlesex Advertiser, Ceylon Observer, Carlisle Express and Examiner, Times of India, Scottish Leader, Pall Mall Gazette, Pioneer Mail, Builder, Kent and Sussex Courier, Carlisle Journal, Architect, Glasgow Herald, Sunderland Herald, Kenilworth Advertiser, Woolwich Herald, Crewe Advertiser, North Herts Journal, Macclesfield Courier, Gorton Reporter, Daily Inter-Ocean (Chicago), Local Government Chronicle, &c., &c.*

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